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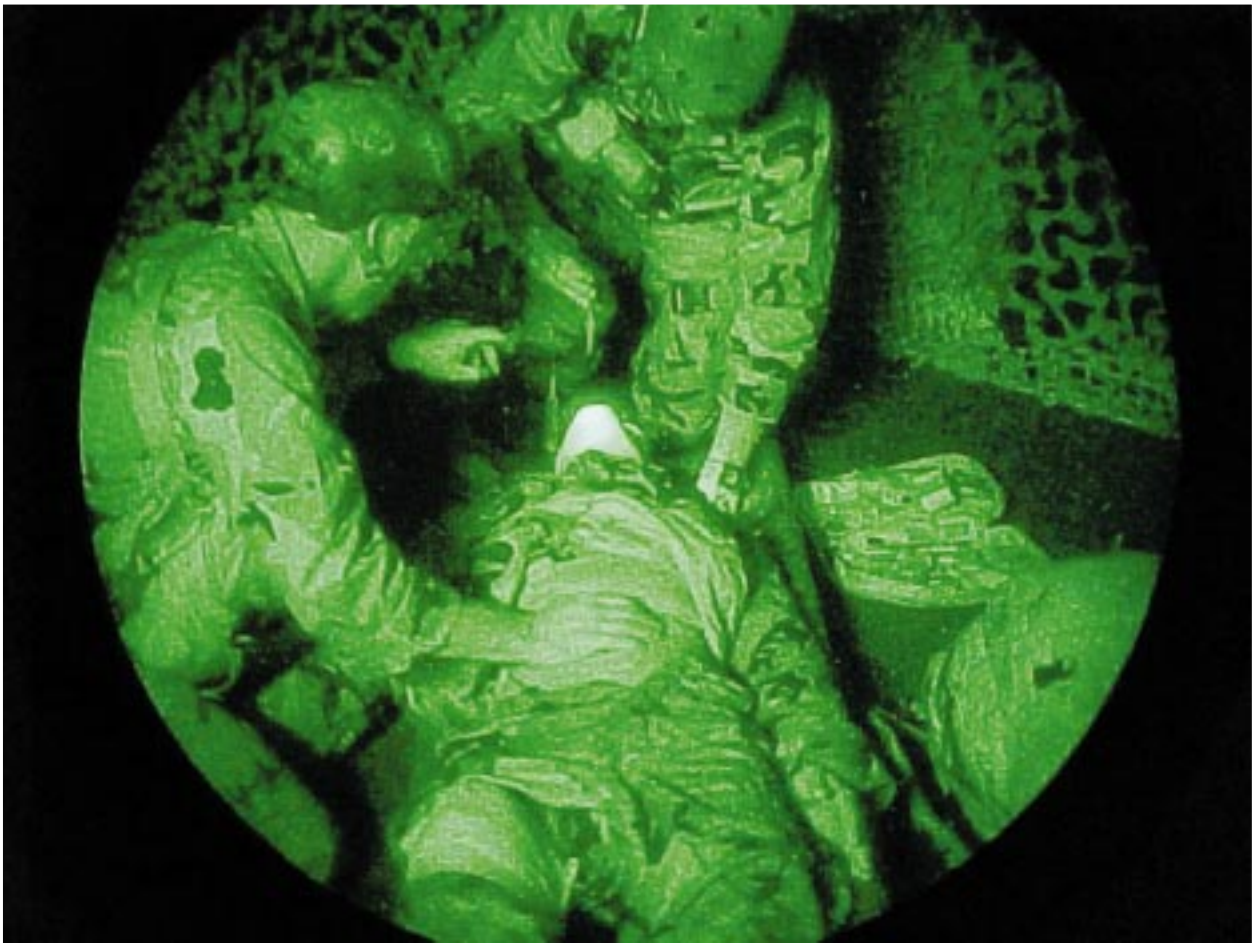

Dedicated to the Indomitable Spirit & Sacrifices of the SOF Medic

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From the Surgeon

United States Special Operations Command

*You **SAY** you're Special Operations, but **I** never heard of you…*

Now that I'm retiring, I've got *The Perspective*. Only when you realize that you are permanently cutting the umbilical cord from the military can you get *The Perspective*. So, for one last time, while still connected by a filament of a neural sheath, I'll give you *The Perspective*.

*Lemme tell you about **MY** Special Ops.*

- No one's good enough to be in ***MY*** Special Ops, except me and my friends and their friends. If you're not one of these, you've got to prove to me that you have what it takes…
- If you weren't in MY training class, chances are you were in one of those easy classes where ANYONE could pass….
- If you were in combat, but not with me or my circle, chances are you didn't get shot at enough or were not in enough danger to have experienced real fear…

…BUT, if you WERE very scared, chances are it was because you were weak…

…and if you got a medal, it probably was because you knew someone who knew how to write up awards, OR you were a headquarters puke by the "flagpole" – they always write each other up, even for trash detail – except me and my friends, who really did the deeds to deserve the award, of course...

…and if you didn't get any medals, it was probably because you probably didn't do anything to deserve it – except for me and my friends, who did it all but never asked for or expected a medal…

…and if you got wounded, you probably were stupid; but if you didn't get wounded, you probably never got close enough to any action – except for me and my circle…

…and if you have a chronic medical problem, you're probably milking the system because you're a wimp – except me and my friends who really got hurt from volunteering for every hard mission…

…but if you volunteered for every mission, it was because you were medal-hunting and seeking self-glory…

…but if you didn't deploy often, you were a "Tab wearer," not a "Tab bearer," and you shirked duty by not volunteering for the hard missions…

…and if you start talking in a bar and say you're Special Ops, I know you really are just talking crap – because you couldn't have done anything significant because I never heard of you and you never knew any of my friends…

You get my point? We ALL think this way. But it's good, as long as it's not dividing and segregating the force! It drives us to constantly prove ourselves – which drives us to improvement and perfection. In the end, I'm you, and you're me – and we're all SOF and all play a vital role in the SOF machine. Being "the mostest," biggest, hardest, longest, bravest, hairiest, smartest, etc., all help define the SOF aura – but no one does it alone; the whole SOF community is involved somehow in shaping, supporting, facilitating, the best of deeds. EVERYONE in the SOF community is, and must be, connected, from the lowest grade civilian or military support person, to the operators, to the commanders, active duty or Reserves. Without each other, we're a bunch of amateur adventurers, like in SOF's olden-days – operating as lone wolves, not always for the whole of Special Operations.

Don't you mess with **MY** Special Ops after I'm gone, because if you do, you'll be screwing up **YOUR** Special Ops, and some day after **YOU** retire, somebody's going to mess with **YOUR** Special Ops. Bad bad bad.

I want to introduce the new USSOCOM Surgeon – Colonel Dave Hammer. This is "Da Hammah!" A mature, experienced, methodical thinker, who is oriented to the front-line operator, wears his heart on his sleeve, but knows where we need to go. Task him to the maximum to take SOF Medicine to the next level. Use the Enlisted Advisory Council, Project MedTruth! Survey, letters to this Journal, the SOMA, and the direct line to the SOCOM Surgeon's Office to make SOF Med the best. You've got to play to have an impact on the course of SOF Medicine. And if you need help, come find me. I'll be waiting, like all those other "O. F.'s" at the "home" – waiting for that one last nod to come back in and show you youngsters how you're REALLY supposed to do it….

Righteously Right! Never say "no"! Wear your heart on your sleeve.
Unconventional Warfare – Unconventional Medicine
See you at SOMA!
yevich OUT!

STEVEN J. YEVICH, MD
COL, USA

Greetings from the USSOCOM/SG office.

I am Col Dave Hammer; the new guy replacing COL Steve Yevich. It is wonderful to be back supporting the terrific folks in the SOF world and I am thankful to the leadership here for giving me the opportunity.

Briefly, for those of you I don't know, I started life as a Navy Corpsman supporting FMF-PAC in various USMC units, then medical school, some private practice and re-entry into the military. I was the last Aerospace Rescue and Recovery Service Surgeon (ARRS/SG), was there when they transitioned to 23rdAF (which was the original AFSOC), and moved to Hurlburt Field with the HQ 23AF in 1987 when USSOCOM stood up under Gen. Lindsay. We worked hard advocating for PJ medical training and tried very hard to assure PJ interoperability with 18D and SEAL Corpsmen. I returned as the AFSOC/SG in the mid-1990s and worked with Col Schmerz toward the establishment of the JSOMTC under Gen Downing's leadership. I now return at this USSOCOM level. So, to old colleagues, it is great to be back, and to new colleagues, I look forward to working with you in improving the medical support to our SOF operators.

In this note, I would like to spend my time reflecting on the accomplishments of my predecessor and friend COL Steve Yevich. He is too bashful to allow his biography or any accolades, but suffice it to say his career is enviable. A former special forces medic, Viet Nam veteran and career warrior, he is the most "purple-suit" guy I know in this joint world. His decorations include a Silver Star, a Bronze Star and many others, and he is a "been there" kind of guy. I have worked with him over the years and watched him as a terrific advocate for every SOF soldier, airman, sailor or marine. The SOCOM/SG directorate has never been better and his accomplishments here in our behalf, to include this *JSOM*, will be a lasting tribute to his support to the SOF community and to USSOCOM in general. As he steps out into the civilian world and his next career, I want to take this opportunity to offer him this salute to his accomplishments, his superb career, and his future career endeavors. God's speed to you Steve, keep in touch and thanks for making this a better place!

DAVID L. HAMMER, MD
Col, USAF
Command Surgeon

Cover

"SOF medics performing nasal intubation... 2001"
Viewed through night vision goggles.

The *Journal of Special Operations Medicine* is an authorized official quarterly publication of the United States Special Operations Command, MacDill Air Force Base, Florida. Its mission is to promote the professional development of special operations medical personnel by providing a forum for the examination of the latest advancements in medicine.

The views contained herein are those of the authors and do not necessarily reflect official Department of Defense position. This publication does not supercede any information presented in other Department of Defense publications.

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From The Staff

It continues to be our deep desire to involve our readers in the production of this journal. Your suggestions, submissions, and photos are an integral part of what makes this journal unique. It is a sharing of your missions and your lives as you go forth as instruments of national foreign policy. We can't do it without your input. *You are* what the journal is all about

As many of you may know, the journal was the inspiration of CPT Don Shipman. CPT Shipman is a former Special Forces medic who went on to become a physician's assistant. As if that wasn't enough, he has now moved on to pursue his doctoral degree. Don will be missed.

We welcome to our JSOM staff, CPT Steve Anderson....Hi, I'm Steve Anderson, also a former SF medic of 13 years, now a physician assistant with over 21 years in service. One of the most excellent and righteous tools we have to span all the SOF services, to share medical information and experience unique to this community, is this journal. The *JSOM* survives because of generous but time-consuming contributions sent by clinicians, researchers and former medics from all the services who were SOF qualified and/or who served with SOF units. I need your help. We are always looking for SOF-related articles from current and/or former SOF medical Vets.

We are especially interested in finding articles related to our SOF medical Navy brethren. We are coming up short in this area and know there have to be many great exploits that would provide insight and experience unique to the SOF Corpsman perspective to share with all. If you have contributions great or small… fire 'em my way. Thanks. Email- JSOM@socom.mil

Special thanks and good luck to COL Steve Yevich the outgoing Command Surgeon. COL Yevich has 30 years of Military experience, most of which was spent in the Special Forces Community as a medic then doctor. A big hello to his replacement, Col Dave Hammer. Col Hammer also has an extensive SOF background within the Air Force community. Welcome.

A new addition to the *JSOM* is the offering of CMEs. In this edition you will find them offered on our HIV and Rabies articles. The Fall Edition will contain articles such as: Study on injuries and lessons learned from Army Rangers in Somalia, Anthrax (CME) and Special Op's R&D issues currently being developed.

With this edition of the *JSOM*, you'll find a survey. As we continue to improve the journal to better suit your needs, we ask that you assist us in filling out the survey so that we can know how to best serve you.

In this edition of the JSOM, we honor our fallen brother, SP4 Edward M. McIlvain III. SP4 McIlvain was a Special Forces medic in Viet Nam.

Lastly, our distribution list continues to expand daily. Requests for the journal have come from all services; from medics to physicians, from clinical to operational units. An additional source of requests has come, much to our delight, from the retired and civilian communities. We will keep you posted as these numbers continue to expand.

Enjoy this edition of the journal, send us your feedback, and get those article submissions in to us:
JSOM@socom.mil

Journal of Special Operations Medicine

GENERAL RULES FOR SUBMISSIONS

1. Usual standards of military writing should be followed (note improper use of passive voice in preceding statement).
2. Use the active voice when possible.
3. Secure permission before including names of personnel mentioned in your piece. Do not violate copyright laws. If the work has been published before, include that information with your submission.
4. Articles should be double-spaced, twelve point font, aligned on the left and justified on the right.
5. Include an abstract, biography, and photo of yourself as part of the article.
6. Use of acronyms should be held to a minimum and when used they must be spelled out the first time.
7. Remember that your audience is inter-service, civilian, and international.
8. Every article has a point to make, which is traditionally stated in the introductory paragraph and restated in the closing or summary. Subtlety is not usually a virtue in a medical publication.
9. An author's cover sheet must accompany each article submitted for publication.
10. Photographs with your article are highly encouraged. Photos must be sent separately from document so they can be converted into a publishing format. Where possible, traditional ("hard copy") photos should be sent, however, scanned and digitized copies can be used **but please make as large as possible, even if you have to send them one at a time.** Every attempt to return your original pictures will be made, but the *JSOM* will not be held accountable for lost or damaged items.
11. Send submissions by email, diskette, CD, or plain paper to the Editor. Email: JSOM@socom.mil or by mail to: USSOCOM Surgeon's Office. Submissions may also be sent to the above physical address. Retain a copy for yourself.
12. We reserve the right to edit all material for content and style. We will not change the author's original point or contention, but may edit cliches, abbreviations, vernacular etc. Whenever possible, we will give the author a chance to respond to and approve such changes.
13. Again, the *JSOM* is your journal. It is a unique chance for you to pass your legacy to the SOF medical community.

Take advantage of the opportunity.

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COL, USA
Command Surgeon

UNCONVENTIONAL WARFARE MEDICINE

"Two days later I went away eastwards to another hospital. This one had moved, on an average, every four nights, carrying all its wounded with it."

-LINDSAY ROGERS in *Guerilla Surgeon. A New Zealand surgeon's wartime experi ences with the Yugoslav Partisans*

The United States Army Special Forces Command (Airborne) (USASFC)(A) has recently conducted a series of seminars on *unconventional warfare*. The Association of the United States Army is holding another one soon. The purpose of these seminars is to return Special Forces to its roots and better prepare Special Forces to continue to be the most relevant special forces in the world. Unconventional warfare (UW) has always been the primary mission of Special Forces. All other tasks conducted by Special Forces are subsets of this overarching, core mission.

Unconventional warfare is, quite possibly, the most misunderstood form of military operations. UW is not simply guerrilla warfare or some variant thereof; it is much more complex. *Guerrilla warfare* (GW), *unconventional assisted recovery, information operations, subversion and sabotage* all play a role in UW. It is defined in Joint Pub 1-02 as "A broad spectrum of military and paramilitary operations, normally of long duration, predominately conducted by indigenous or surrogate forces who are organized, trained, equipped, supported and directed in varying degrees by an external source. It includes guerrilla warfare and other direct offensive, low visibility, covert or clandestine operations, as well as the indirect activities of subversion, sabotage, intelligence activities and evasion and escape."

Medical support to unconventional warfare is similarly misunderstood. Twenty percent of the enlisted structure on a Special Forces "A" Team is medical for a good reason. Medicine is not just important; it is essential to successful UW. Special Forces groups are staffed with medical, dental, and veterinary officers much in excess of their assigned troop strength because our founders realized that these professionals would make a difference in the guerrilla warfare operational area. Medicine is a difficult area of UW:

"Care of the wounded in partisan warfare is one of the most difficult problems . . . , wherein the presence of wounded, as distinct from the regular army, often has a decisive effect on the planning and development of military operations."

Major General Gojko Nikoliš
Yugoslav Partisans

I plan to increase the training in UW that our new medical officers and physician assistants receive in their incoming SOMIC (Special Operations Medical Indoctrination) Course at Fort Bragg. They will also attend the 11 day Special Operations Medical Skills Sustainment Program, sitting beside 18Ds and SOCM medics from all three SOF components, in the same class, training to the same standard.

My USASOC Surgeon's conference scheduled the weekend before the Special Operations Medical Association (SOMA) meeting in Tampa in December will concentrate more on UW also. I have proposed to SOMA an entire day of "GW Medicine" with multiple presentations and an afternoon panel discussion on what we need to do to develop UW medicine for the twenty -first century. Special Forces was originally designed for UW in the 1950s, taking as its model the World War II Jedburgh teams of the Office of Strategic Services. Special Forces is involved in UW on a daily basis, and our medics are involved in UW medicine daily. UW is a fact today in many countries. Many lessons learned from the medics of those partisan struggles are there to be read and studied. We need to do that. The December SOMA seminar on GW medicine can be a start.

During the resurgence of special operations in the 1980s, the Army focused on the threat of Soviet invasion of Western Europe. Therefore, Special Forces assumed a large role in *direct action* (DA) and *special reconnaissance* (SR). These missions assumed the need for mainly trauma care. With the demise of the Soviet Union and the evaporation of the threat of a "Fulda Gap" scenario, DA and SR have decreased in importance as the Army increasingly conducts other missions. Special Forces has assumed a larger number of *foreign internal defense* missions to advance the National Military Strategy by "shaping" the strategic environment. Medical needs for those missions are different: much more medicine and longer term care; less trauma, but still prepared for it.

As the world becomes increasingly unsettled and volatile, we must continue to be well prepared to conduct UW. By law, USSOCOM is the only force directed to conduct UW. Of all the USSOCOM forces, Special Forces is the most prepared to conduct UW in its broadest terms, including but not limited to, guerrilla warfare.

Soldiers required to conduct UW and UW medicine are unique. They must be highly trained, skilled and mature. They must have excellent problem-solving skills and mental agility in the most fluid of situations. Their ability to be flexible and adapt to their environment should be unparalleled. Language capability, area and cultural expertise and excellent interpersonal skills complement these requirements. Special Forces soldiers must understand the current situation of those with whom they train or come in contact, as well as comprehend the social, economic and political milieu in which they operate.

The primary purpose of multiple overseas deployments of Special Forces in peacetime is to ensure that the required level of expertise is present when the hour of crisis arrives. Many of these skills, needs, expertiese's, are directly applicable to the medical part of the mission. We need to learn the skills and employment of native health care providers. We need to be adept at training local nationals in providing heath care and combat trauma care to indigenous soldiers.

Cultivation of relationships and identification of key personalities (engagement), is a mission that Special Forces conduct on an on-going basis. Through thorough study and boots-on-the-ground presence, Special Forces engages daily in prospective UW *operational areas* (UWOAs). One of the most challenging aspects of the entire idea of UW is that Special Forces units are, in fact, in their UWOAs regularly.

This dynamic nature of UW ensures the relevance of Special Forces. However, UW is in a state of neglect, as is UW medicine. UW doctrine is outdated, and training in UW is limited. This command is revising and updating doctrine to reflect current requirements and capabilities. As the flexibility and usefulness of UW become apparent, mission guidance will become more focused and training will, in turn, become more focused. Lessons learned are not found in after action reports from training exercises, but rather in the after action reports of those forces that have done UW or have been confronted by UW operations around the world. Not just limited to American experiences, but extended to the operations of the Russians in Chechnya, the Australians in East Timor and the plethora of other UW activities that have taken place in the last few years. We need a review of urban UW experiences, which is a particularly tough area for medical care.

We are revitalizing UW in a number of ways. The UW training conducted during the Special Forces Qualification Course is reemphasized, as are language and cultural training. The Tables of Organization and Equipment (TOEs) of the special forces groups, based in great part on the missions of the 1980s (DA, SR, and FID) must be reevaluated. The Surgeon's Office is now evaluating all medical equipment and sets. Aspects of *counterterrorism/combating terrorism*, *counterproliferation of weapons of mass destruction,* and *information operations* that are inherent in UW are being further evaluated to ensure that Special Forces are fully capable of conducting their limited share of these missions. UW medicine means an emphasis on medicine and nursing as well as keeping the world class trauma skills we currently have.

We must evaluate potential contributions of technology to UW and UW medicine while remembering that the key ingredient in the conduct of UW is the Special Forces soldier. It is from the unique capabilities of highly trained warriors that all other capabilities to conduct UW and UW medicine flow. The basis of UW is people, and the diversity of those people makes it a dynamic medical discipline. To extract the maximum advantage from our ability to conduct UW, we must stay focused on unique soldiers who achieve that advantage. Solid training in UW will ensure that Special Forces of today will remain the most relevant special forces in the world and solid UW medical training will insure we are the most relevant medics.

Rocky Farr
Ban Me Thout, Vietnam.
On a Montanyard house call. 1970

Component Surgeon
NAVSPECWARCOM

Larry Garsha
CAPT, USN
Command Surgeon

Hoo Yah Navy Special Warfare corpsmen and physicians.

Hoo Yah Colonel Hammer.

Col Hammer is well known to SOCOM, having been the USAF SOF Surgeon. He brings experienced perspective to his challenging job of leading medical professionals. (You know the joke: Leading docs are like herding cats, they are all individualists!)

In May, funding was obtained for injury rehabilitation units at both Boat Squadrons. In July, Special Boat Squadron One has hired its Certified Athletic Trainer. Two openings are presently available, one at Boatron TWO and one at DEVGRU. We are looking to POM for O4 MFP 11 funding for physician assistants at the Boatron's and for the deploying tactical units of each coast. I have communicated with the Specialty Leader for physician assistants and with CNSWC and all are in agreement that this augmentation would enhance the coordination of the delivery of care. It would also extend the availability of physician assistant billets in SPECWAR, something that many Corpsman are interested in. A career choice to go PA results in officer rank (and pay), and post retirement quals to enter the job market.

Let me know what you think.

In June, the Board of Regents (BOR = boring) of the JSOMTC met and worked on the teacher-student ratio for the services. The Navy continues to be stalwart and outstanding in the instructors and leadership in spec ops medical skills. I am very proud of our enlisted instructors and their senior leadership in producing SOF's finest combat corpsman (my opinion!). We are hopeful that the ratios will normalize between the services so that our dedicated SEALS will have Fridays off after 1700 (this is after all shore duty).

NSW Force 21 is a marching. RADM Olson has presented to Naval and Marine Corps forces that have CINCs that will utilize our maritime Special Operation capability and they are all in agreement that we are not only leaning forward but anticipating the new SECDEF Rumsfield's desire for rapidly mobile surgical strike capability.

On a sad note, some of your brothers-in arms have fallen on rocky soil. We have had six parachute accidents in the past six months. Some were very hard landings with continued rehabilitation needed. Check to find out who (this is not the forum to mention names) and give them a call and words of encouragement.

You are in a risky business, no doubt about it. CNSWC Medical is providing SOCOM a database devised by CSBR ONE on injuries. This will support the need for additional funding and research in making fast boats easier to ride in high seas. Called shock mitigation, multiple efforts are in progress to define new craft hardware and physical conditioning that will result in less injury. CAPT Bill Shepherd, NSW's frogman-astronaut, Commander of a recent deployment to the new space station, has retired from active duty. He has been called back for several months to use his NASA training in heading up the multiple shock mitigation research.

I enjoy keeping in touch with deploying corpsmen via email. NIPR net is usually the easiest access, if you ever have a need send me a message.

Other news.... New Group Surgeons at ONE: LCDR Kevin Walters and CDR Scott Flin; at TWO: LT Jose Henao', at DEVGRU: CDR Fenton, and at BUD/s: LT Ware. Look them up when you are in town. They are working for you.

Other changes.... The facility at COMNAVSPECWARCOM has finally been completed so as I write this my staff is boxing everything up to move to our new medical spaces. Phone numbers and email remain the same, but no telling when we will be back on line. I am actually going to have a treatment room and an office to talk to folks about their private business. Hoo Yah!

Oh, the COMNAVSPECWARCOM 6400 is coming. Done in one month. I know you are holding your breath. Wow a 7 year breath hold. Better ask CAPT Butler about that.

New Chief of Staff at WARCOM, CAPT Bill Morgan, and a new Deputy, CAPT Bill Wildrick. CAPT Joe Maguire is going to be Chief of Staff at SOCOM in Tampa.

If you have a great idea or even a FROGMAN idea Email me at unclass: garshal@navsoc.navy.mil.

Component Surgeon
AFSOC

James J. Dougherty
Col., USAF
Command Surgeon

Futuristic SOF Medicine

This command has been lucky. While the rest of the Department of Defense has struggled to maintain the lead in war fighting ability with fewer dollars, fewer people and more work to do, the Special Ops community was in an expansion mode. Funds were available to develop medical initiatives to enhance the war fighter's operational performance, to increase the physiologic tolerance of the soldier, sailor and airman, and to fine tune the interface with the tools and weapons the special operator employs. The Biomedical Initiatives Steering Committee (BISC) has done world-class work to accomplish these goals.

But the salad days are over. Each year brings more pressure to become more efficient, to use increasingly scarce resources to do more jobs—and do them better. This got me thinking about how we should look to the future: what kinds of capabilities do we need to accomplish the special operations mission of 25 years down the road? Do we go high-tech, and work on the Star Trek Tricorder, or do we look for "appropriate" technology like better field dressings, things that are simple but modern, that improve things across a broad spectrum of use—but don't cost a lot?

There's a scene from the movie *Aliens* where an officer monitors video, sound, EKG, and other parameters on his squad members from a command vehicle. The portable mics, and other features, were impressive at the time, but seem pretty tame now. More recently the sci-fi community has talked about nanotechnology to accomplish wound repair from *inside* the body: molecule-sized robotic devices that live like symbionts in our blood stream, and whose sole purpose in life is to repair damaged tissues, remove abnormal cells, and secrete pharmacologically active agents that redirect blood flow and stimulate other repair mechanisms. Sounds like the "doc" may one day become as useful as a fifth wheel!

It may sound off-the-wall, but it's not that far away. I recently read an article where some researchers have designed a molecular fan. Yes, just like a ceiling fan, except about 10 Angstroms in diameter. Also, for those of you who find PRK and LASIK surgery to be miraculous, wait until you see what's coming in adaptive optics. This is a device that you put over your eyes that bounces light off the retina to judge how to conform the surface of its lens to adapt to your specific correction. Up to this time corrective lenses had to be ground with fairly simple curves, no matter how wrinkled, wavy, scarred or cloudy your visual axis structures were. Now each area of the lens will conform to the requirements of the underlying visual apparatus. No more corneal ablation (Zap!).

So what does all this admittedly fascinating speculation have to do with SOF medicine? Our business is to be light, lean, and decisive. Clearly we won't be going after technology or capability that can't be man-portable. We once looked at a field cautery device that would allow our medics to close wounds primarily in the field; debridement and fibrin glue closure occurred simultaneously. But, the power pack was large and cumbersome, and the logistics of maintaining the device were complex. I'm convinced that had the entire apparatus been the size of a penlight we would have seriously considered funding its further development.

Cost saving is already a prime consideration. One measure we've adopted has been to use off-the-shelf materials and products, where the SOF community felt that there was a good match between what the civilian community would find useful to extend medical care and what the special operators could adapt to field use. Sometimes the match isn't a good one and we need to be careful. The latest "super-light, industrial strength pulse oximeter" may show its limitations when you turn off the lights: a light-based sensor positioned around the casualty's index finger may give away the team's position like Rudolph the Red Nose Reindeer—not my idea of being stealthy.

So, to come back to the original question, which way do we go? What's the prescription for success in staying light and effective, and capitalizing on new technology while remaining cost-effective? The rest of this article is just Jim Dougherty's opinion on points of entry to attack those questions. Also, there's a decided USAF-based "bent" on what's needed.

There are three overriding observations. But, one caveat is in order: the BISC has for many years been a uniquely successful effort to serve the SOF war fighter. Without this organization and its leadership we would be up a creek.

Attacking the SOF Medical Future

1. *Our medical tools have outstripped our senses*. By this I don't mean that our penlights are better than our eyes. An example tells the story. As a flight surgeon my primary aircraft is the MH-53. Some months back I flew on an MH-53 medical mission. The scenario was to pick up a casualty from the ground forces and transport him back to a staging area, providing en route trauma care. Everything worked great… until egress. Flying low level, blacked out and on night vision goggles (NVGs) effectively disrupted all but the most basic treatment efforts. The vibration, noise and limitations on visual acuity made it all but impossible to observe, palpate, percuss and auscultate. Technology can give us some data like EKG tracings. But for other data we still have to use hands, eyes and ears to find out what we need to know. No matter how many whiz-bang widgets we carry, it's not going to help if we can't assess the need, diagnose the condition, perform the procedure, or monitor the status of their use. Maybe we need to combine the adaptive optics I mentioned above with our NVGs to get our vision back under these circumstances. Further, instruments are needed to counteract or defeat the effects of vibration, like maybe an equivalent to the noise-canceling ear phones: a hand-worn vibration canceling ultrasound or sonogram device, shaped like a glove, to detect swelling, masses, induration and the like. In summary, we should focus some of our effort on heightening our senses under mission conditions.

2. *We carry too much stuff*. The Air Force is organized around *unit type codes* (UTCs). You get issued a whole UTC, one each, no matter what you really need. I'm sure the other services are similar. The old Air Transportable Clinic used to carry nesting boxes full of plaster that I *never* saw used. Things aren't that bad now, but there's room for improvement. The Air Transportable Treatment Unit (ATTU) that our medical elements use is modular, and tailorable to the mission. But you still take each module as a nesting box. The lab box may have everything in it you think you'll need, but maybe it doesn't, or maybe it's got some stuff you can't conceive of needing on the mission. Somebody should sit down with the concept of our SOF UTCs and modify it. Instead of a "unit type code" we should have a "mission library code," where we develop a medical catalog of stored items that are coded for how they get used, and packed in containers in organized ways only when somebody decides they are needed for a specific mission. Suppose you want all the IVs, but not the chest tubes, because the mission is humanitarian assistance during an outbreak of diarrheal disease.

3. *The SOF mission doesn't drive the medical skills and equipment we have*. What do you have to resupply the most when you return from deployment? I'll bet it's not the Pleurevac ®. That doesn't mean we don't need trauma skills, but there are other things that we spend a lot of time doing that don't get the same emphasis. Some years ago we had a group of Special Tactics personnel develop a parasitic infection similar to Trichinosis. It turns out that there have only been about a hundred cases recorded of this rare disease in human history. There are too many times our troops deploy to primitive areas, where a simple skill like interpreting blood smears is important. I haven't done a manual white count in years but I *think* I still could. What are the medical skills we need? Skills needed to do BK amputations and general anesthesia are important, but it doesn't help you eliminate an insect vector. It's been a while since somebody looked at how our missions have evolved. Maybe it's overdue.

The considerations above just scratch the surface. There are better ideas out there. You are the ones who have been dealing with getting the job done. Imagine yourself ten years down the road, and let your mind roam about what you would like to have, in terms of skills and tools, to do your mission. There's no such thing as being "too far into the future". I hope you'll share those ideas with all of us, so we can stay *a step ahead*.

Education and Training

UTHSCSA Special Operations Combat Medic/ EMT-Paramedic Bridge Program

Robert McCumsey, EMT-P

You are your greatest investment. The more you store in that mind of yours, the more you enrich your experience, the more people you meet, the more books you read, and the more places you visit, the greater is that investment in all that you are. Everything that you add to your peace of mind, and to your outlook upon life, is added capital that no one but yourself can dissipate.

George Matthew Adams

Background.

In the early 1990s the USSOCOM Surgeon's Office, with advice and cooperation of its component surgeon offices, embarked on developing and establishing a new educational institute that would consolidate and enhance the medical education and training of all of its nontraditional enlisted healthcare providers. That institution would later evolve into the Joint Special Operations Medical Training Center (JSOMTC) at Fort Bragg, North Carolina, and the primary education program would be the Special Operations Combat Medic (SOCM) course.

This congregation of innovative thinkers also concluded, during the concept's research and development stages, that SOF nontraditional providers must not only an equal medical education through standardized curriculum, but also an recognized baseline credential. The EMT-Paramedic standard was selected as the baseline standard credential for all SOF medics with the National Registry of EMTs (NREMT) acting as the credentialing body.

One problem arose - preexisting SOF medics who had never been EMT-Paramedic trained or certified were excluded. Many believed that these individuals would slowly vanish with attrition. However, attrition did not happen and the community was left with many senior medics who were not paramedic certified. Furthermore, there was no direction or regulation that mandated medics who went through the JSOMTC to sustain their NREMT paramedic certification. Finally, on November 5, 1998, the USSOCOM CINC mandated that all SOF medics would obtain and sustain the NREMT EMT-Paramedic certification.

Because the JSOMTC was not developed to conduct short modularized paramedic programs at the time, each Component Command Surgeon planned to use civilian paramedic programs. Each component successfully sought civilian-based paramedic programs and sent medics to those courses; however, the costs of running the programs were expensive and burdensome. Many of the programs were eventually cut back in funding or halted altogether. USSOCOM needed another program to insure the EMT-P requirement was met.

Program history

USASOC conducted an extensive survey in the early 1990s among paramedic courses throughout the United States to find a course training their current Special Forces Medical Sergeant force to qualify as EMT-Paramedics. USASOC not only found a program to meet this requirement, they found a program that was relatively cheap and short. The course was shortened due to successful negotiating skills on USASOC's part. They presented the university's Emergency Medical Service Department with the 300F course's plans of instruction (POIs), and were able to convince the program director to accept the military medical curriculum for a prerequisite to the program in lieu of the typical requirement of either Texas state or NREMT certified EMT-Basic. Additionally, because the 300F course's curriculum focused so heavily on trauma medicine and pharmacology, the university was able to decrease these particular subjects' didactic and clinical time lines.

The end result was a course designed to provide senior medics additional training equal to civilian paramedic education, thus allowing the medics to sit for the NREMT examination.

USASOC established a contract for services with the University of Texas Health Sciences Center at San Antonio (UTHSCSA), signed by all parties in March, 1998. The school successfully produced many paramedic graduates who became NREMT registered; however, the program did not produce enough to meet the needs of USASOC. The main reason for this failure wasn't because of the caliber of paramedics trained

but rather that the course was under-utilized by USASOC's units. Unfortunately, the contract expired with the last class convening in early 2000, and because of under use the contract was not continued.

On 12 March 2000, the USSOCOM-sponsored Board of Regents (BOR) authorized the establishment of a central university-based program to train the enlisted medic force. They decided to reopen a contract with UTHSCSA because the relatively short course length wouldn't keep the medical assets away from their units for too long of a time. The BOR further realized that the cost of the program was not only the least expensive of all the programs currently used by components, but it was the only program that could handle over 30 students per iteration.

The BOR further decided that the USSOCOM Surgeon's Office would manage the UTHSCSA EMT-P program.

Program overview

The UTSHCSA EMT-Paramedic program is an intensive ten-week certificate course that consists of 461.5 hours of didactic, laboratory, clinical and field internship instruction. Figure 1-1 provides a basic hourly break down of the total program. This program currently meets the depth and breadth of the 1985 National Highway Traffic and Safety Administration's (NHTSA) curriculum and has been accredited by the NREMT. USSOCOM has contracted three classes per year for the next two years. Each class will be able to train 35 students. In the event that the contract minimum course enrollment of 25 students is not met, that iteration will be canceled.

Phase	Hours
Didactics	139
Skills Laboratory	70
Hospital Clinical Rotations	90
Field (ambulance) Internship	100
Internal, ACLS, PHTLS & NREMT Examinations	62.5
Total Course Hours	461.5

Figure 1-1, UTHSCSA EMT-Paramedic Hour Break- down

The field internship (ambulance rotations) generally begins in the third or fourth week of the program. Each individual student will perform these rotations at San Antonio Fire Department locations scattered throughout the city. The rotations are 8 to 14 hour-long days conducted around the clock. These rotation experiences are probably some of the best that these medics will ever see—family members in Toyota pickups rattled by AK-47s less than 500 feet from the station, full-blown cardiac codes in the public housing developments due to heroin overdose, and even head trauma to little old grannies who had too many martinis.

Following the field internship, the students begin their hospital clinic rotations. The hospitals that the university uses includes the Santa Rosa Hospital, the University Hospital and the local Veteran Affairs Medical Center. These rotations begin in the sixth week of the program and are 8 to 12-hour shifts. The class is broken down into teams that take turns performing shifts. Each student is generally assigned to a doctor, physician assistant or a nurse practitioner. The clinical phase includes rotations in the emergency department, intensive care units, orthopedics department, labor and delivery and in the operating rooms. Students must keep on their preceptors' coat tails because at the end of each day these preceptors must sign off the students' clinical skills checklist.

Enrollment process

The course is open to candidates assigned or attached to one of the three component commands (AFSOC, NAVSPECWARCOM and USASOC). The specific military occupation profiles authorized to attend the program include the US Army MOS 18D, 91-B or 91-W; US Navy NEC 8491 or 8492; and US Air Force AFSCs 1T0X1, 4N0X1 or 4F0X1. Individuals or units must contact their component program managers (figure 1-2) to obtain class seats and application packets—units do not contact the USSOCOM Program Director without going through their component manager first. The program managers will either email or mail the candidate the UTHSCSA application packet (see figure 1-3) and a welcome pamphlet with any other necessary forms.

USSOCOM Surgeon's Office Director
MSgt Bob McCumsey Mccumsr@socom.mil
DSN: 968-5043 FAX DSN: 968-2568
Commercial: (813) 828-5043 or 5442

AFSOC Surgeon's Office Manager
MSgt Daren Robinson Daren.Robinson@Hurlburt.af.mil
DSN: 579-2269 FAX DSN: 579-2862
Commercial: (850) 884-2269

NAVSPECWARCOM Surgeon's Office Manager
HMCM Brian Cavolt Cavolt@navsoc.navy.mil
DSN: 577-0783 DSN FAX: 577-3197
Commercial: (619) 437-0783

USASOC Surgeon's Office Manager
MSG John Barret Barrettj@soc.mil
DSN: 239-6577 DSN FAX: 239-4292
Commercial: (910) 432-6577

Figure 1-2, Program Director and Component Program Managers

UTHSCSA/ USSOCOM Application Form
UTHSCSA Student Immunization Record
USSOCOM EMT-Basic Preparatory Questionnaire
Copies of either high school diploma, GED or high school transcripts
Copies of vocational school, college or university transcripts
Copies of current AHA Healthcare Provider BLS or American Red Cross CPR cards (front and back)
Copies of State or NREMT EMT-Basic Certification Cards

Figure 1-3, UTHSCSA Application Submission Requirements

In addition to a properly executed admission application each student must also submit other key documents (see figure 1-3). Students who already hold an NREMT-Basic or Intermediate card do not have to fill out the USSOCOM EMT-Basic Preparatory Questionnaire. All students must send in some sort of proof that they have a high school education or equivalent.

The completed applications must be either faxed or mailed to the USSOCOM Program Director two weeks prior to the first day of the course. The mailing address is:

USSOCOM/ SOCS-SG
Attn: MSgt Robert McCumsey
7701 Tampa Point Blvd.
MacDill AFB, FL 33621

A student should check his application for completeness and accuracy before submitting it. Failure to properly complete the application packet could result in the application not being processed and the candidate being removed from the course.

End comments.

The UTHSCSA EMT-P course is well-established and has proven itself successfully in producing NREMT-certified paramedics. The last contract paramedic class with UTHSCSA should graduate before September 30, 2002 and the course will then cease. The NREMT has stated that their organization will stop registration services based on the 1985 curriculum for EMT-Paramedics when the new curriculum begins in 2002.

The SOF community should take the opportunity to use this course while it still exists.

Command Surgeon's NGO Training Initiative

Chris Reynolds, CEM , EMT-P

FLASH: The mythical island of Aragon, located in the Atlantic Ocean between the West Indies and the Azores, is embroiled in conflict. Numerous refugees flee the fighting and seek safety in camps located throughout the country. Your team is dispatched to assist in medical operations in the mountain regions where medical care is unavailable. Your medical intel brief states a group of non-governmental organizations (NGOs) will also be in the area providing medical care....

How many times has this scenario played out? You suddenly find yourself in a hostile area providing medical care to indigent civilians who are victim of the conflict. Not only are you practicing in an unfamiliar area, but you are also working alongside civilian volunteers. Do these NGOs present a hazard to your operation? What can the NGO do to better prepare for deployment into a hostile area?

It has long been known that various agencies and organizations have markedly different training programs, with many aid workers ill-prepared to face the serious challenges that are inevitable in times of war or following natural calamities.

In June 2000, the Office of the Command Surgeon, United States Special Operations Command (USSOCOM) initiated a project to train civilian volunteers from around the world to operate in hostile environments. In combination with the International Diploma in Humanitarian Assistance (IDHA), the Surgeon's Office instructed international volunteers in mine recognition, force protection, and negotiating checkpoints.

The International Diploma in Humanitarian Assistance (IDHA) is a one-month course for humanitarian workers run by the Center for International Health and Cooperation, in cooperation with Fordham University in New York, University of Geneva, Switzerland and the Royal College of Surgeons, Ireland. The IDHA provides a basic standard for those who assisting humanitarian crises, particularly during conflicts and disasters.

The IDHA is a multidisciplinary program created to simulate a humanitarian crisis, with twelve-hour days, six days per week for a full month. The initial course was opened by a strong endorsement from United Nations Secretary General Kofi Annan, and attracted internationally renowned lecturers from all parts of the world.

During their fourth week of training, students are exposed to relations with the media and the military. Additionally, they undergo syndicate and individual examinations. Specific military topics include "The Military Response", "Force Protection", "Mine Recognition", and "Checkpoint Negotiation". The students are divided into groups (syndicates) and taken through a series of role-playing exercises where their senses are bombarded with the realities of conflict. Through this realistic training, students are taught the importance of maintaining a cool head and thinking clearly. "The checkpoint scenario's were so realistic", one student from France said. "it taught me what to expect and how to react which could save my life and the lives of my team". Stressing realism is one aspect which separates the IDHA course from their peers. Many of the students are veterans of real-world deployments and bring a sense of reality to the training. Others are former military members who also convey the very real nature of humanitarian assistance.

The 352nd Civil Affairs Battalion and the 142nd Aeromedical Evacuation Squadron provided assistance. "Their involvement was crucial to the success of the course," Command Surgeon Colonel Steven Yevich noted. "Without their help, our initiative would not have been successful".

At the time of writing this article, IDHA-2001 will be held at Ft. Hamilton, New York and will enlist the assistance of the New York City Police Department. Several undercover narcotics detectives will role-play this year's course. "We are excited about assisting the USSOCOM Surgeon in this year's training.", Deputy Police Commissioner, Inspector Sal Carcaterra, New York City Police Department said. "Many of my detectives are either former members of the military or active in the Guard and Reserve". The role-playing brings a sense of reality that cannot be matched. Much like the Q-Course or Joint Readiness Training Center (JRTC) qualification, students are immersed in an environment where survival is the issue.

The Center for International Health and Cooperation, which oversees IDHA, has strong ties with the United Nations, particularly the Department of Humanitarian Affairs. Headquartered in New York, with offices in Ireland, the United Kingdom, and Switzerland, the Center has promoted its work through an impressive series of seminars, books, exhibits, and field projects in war-torn areas. The Center has been granted full consultative status as a Non-Governmental Organization (NGO) at the United Nations and is recognized as a public charity by the United States Internal Revenue Service.

COL Steven Yevich describes *the exercise* to Ft Hamilton garrison commander, LTC Rodney Gettig.

Attack! NGO students are ambushed by bandits. One of three check point stations, the bandit check point taught the lesson of negotiation and communication.

Lt Col Kevin Riley and Maj Dona Iverson discuss emergency moves while under hostile conditions.

Students are interviewed at the UN checkpoint. Here, they learned the importance of passports and teamwork.

Research and Development

PERSONNEL LOCATION DEVICES

Robert Clayton

Before television (yes there are human beings that survived before TV became a household product) Dick Tracy, a popular comic strip character, had a wristwatch that was a two-way radio and a video receiver/transmitter. He could communicate with his dispatcher and receive information about everything. Most of the youth of that era could not wait until they could have their own video/two-way communication wristwatch. The only problem was that Sony™ and others were about a generation away. Fast forward to the 1960s.

The U.S. Government became involved in the Cold War and was committed to protecting the world from the spread of Communism. Unconventional/guerrilla warfare became the trademark of Special Forces.

As the counterinsurgency campaign increased in scope so did the number of U.S. and indigenous casualties. As the majority of reported casualties were from "Advisors" in SEA, the major emphasis on training was focused on the Viet Nam scenario. Medical training focused on triage and treatment of gunshot wounds and tropical diseases.

No known medics or team members were killed treating malaria or dysentery, but several were killed while treating team mates or indigenous personnel injured as a result of projectiles. The medic saved some of these personnel. It is sad that a large number of the medics that were killed in action died trying to save someone already expired. It is gut instinct to charge forward and render aid upon the first call of "medic". It is human nature. A withering hail of bullets does not overcome this reaction. A medic's first thought is to administer to those that he was trained to treat.

Records indicate that the 5th Special Forces Group had 57 medics killed in action (KIA). Without getting into the operational situation of each one of these casualties, 57 is a large number for such a small unit. The conventional forces that were committed to the campaign in Viet Nam also lost large numbers of medics.

Fast forward to the year 2000. Technology caught up with Dick Tracy - cellular telephones, digital cameras, video watches. Just about everybody has at least one of these devices. Palm Pilots™ have become the "techno life support package" for half the population (if you do not have a secure SATCOM cell phone with wireless internet connectivity, you just are not in the running). So, what does this have to do with a medic? Not much, you say? Think about it.

How about an infrared device that weighs 4 ounces, and can detect a heartbeat from 100 meters away, through a wall? How about a button-sized low frequency emitter that when interrogated returns a signal in the white noise spectrum? The development of these devices is near term. How many medics or commanders could use this device to determine if and when a medic needs to subject himself to that withering hail of gunfire. How about the same application in combat search and rescue (CSAR)?

Do not confuse these devices with personnel status monitors or constant vital signs transmitters. These are special purpose devices that should be employed as they are designed, to detect life and to assist the medic in ascertaining the status of the casualty.

If you think this technology is worth pursuing let your component surgeon know or email me at claytor@socom.mil.

Please do not send me any email comments about my mental status. If you think that I read too many comic strips as a kid, I will be forced to tell you about the radio shows. Have you ever heard of Buck Rogers or the Phantom?

HIV Postexposure Prophylaxis for Special Forces Soldiers

Robert Lutz, MD
Darrell Carlton, MD
Shawn Taylor, MD

Abstract

Human Immunodeficiency Virus (HIV) is a recognized healthcare occupational hazard. The virus also presents a hazard to deployed special operations forces (SOF) personnel. Management guidelines for work-related exposure to HIV mainly deal with health care workers in a first world hospital environment. Formal guidelines for prophylaxis regarding possible HIV exposure in third world environments have not been established. SOF personnel deploy to regions such as Sub-Saharan Africa that have a reported HIV incidence of 35% or higher. This article examines the case of a SOF servicemember exposed to HIV in a confrontation with host nation personnel, the problems in trying to use current CDC guidelines and host-nation health care capabilities, and a solution devised to ensure appropriate prophylaxis in future cases.

Introduction

Human Immunodeficiency Virus (HIV) presents an occupational hazard to personnel who work in a medical setting.[1,2,3,4,5,6,7] The United States Centers for Disease Control and Prevention (CDC) have published guidelines for the management of worker exposures to HIV and recommendations for post-exposure prophylaxis (PEP).[8] These guidelines are designed for the management of health-care worker exposures to HIV that occur in the U.S. The guidelines are intended for use in the hospital setting where the source patient is often known and easily available for assessment. In these cases providers have a known source, the medical history is available, and the patient can be assessed for HIV risk factors, testing and follow-up.

Members of U.S. military special operations forces, particularly the U.S. Army Special Forces, are often involved in training exercises and operations in third world countries where adequate medical care is lacking. Many of these countries, specifically those in Sub-Saharan Africa, have a very high incidence of HIV.[9,10,11] Current CDC guidelines provide a starting point in planning the medical response for a soldier who sustains a significant exposure to blood or other body fluids while working in these areas of epidemic HIV infection.

Case

A 35 year-old U.S. Army Special Forces soldier sustained a deep human bite in an altercation with a robber in a Sub-Saharan African country. The injured soldier was travelling in a car with two other Special Forces soldiers when they were stopped by armed bandits demanding the soldiers' money and passports. The soldiers engaged the bandits in hand to hand combat. During the fight one soldier was able to disarm a bandits, but in the process was deeply bitten on the left forearm. At the time of the bite the criminal had blood on his face and in his mouth from wounds sustained during the fight. The bitten soldier detained the bandits until the police arrived. Subsequently (approximately two hours after the bite) he went to the U.S. embassy and had his wound cleaned by the embassy nurse. The soldier contacted his unit medical officer (UMO) for recommendations. The UMO consulted with the group

surgeon of 3rd Special Forces Group. Due to the unknown nature of the source patient, HIV post-exposure prophylaxis was recommended.

The U.S. soldier returned to the U.S. Embassy, which had a supply of Combivir ® (300 mg zidovudine and 150 mg lamivudine). He was started on Combivir® approximately 8 hours post-exposure and then evacuated to the U.S. Upon his return he was started on a six-week course of indinavir in addition to the Combivir ®. He also received a baseline HIV test (negative) and hepatitis panel. Prior to deployment the patient had been immunized for hepatitis B and upon return tested negative for hepatitis C. Host-nation officials subsequently reported that the perpetrator was HIV positive. The soldier has completed his course of HIV post-exposure prophylaxis and is receiving follow-up testing by his unit medical officer.

The CDC Guidelines

In a supplement to the *Morbidity and Mortality Weekly Report*, 15 May 1998 (Vol. 47, No. RR-7), the CDC published *Public Health Service Guidelines for the Management of Health-Care Worker Exposures to HIV and Recommendations for Postexposure Prophylaxis*. (**Editors note**: available online at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a1.htm). The guidelines are based on literature, showing postexposure prophylaxis (PEP) can prevent infection with HIV after a significant exposure to HIV-infected blood or body fluids. In the report the authors recommend a three-step process to determine the need for HIV PEP.

The first step is to determine an exposure code. The code is determined by the type of exposure (e.g. intact skin, mucus membrane, non-intact skin, or percutaneous). The second step is to determine the HIV status code, based on the HIV status of the exposure source. In the third step, the combination of the status and source code is used to determine the HIV PEP recommendation.

The CDC guidelines provide four categorical recommendations for HIV PEP. The first advises that no PEP is needed. This would be the case if a small volume of blood from an HIV negative source contacts intact skin.

The second recommendation is to "consider" a basic regimen, four weeks of zidovudine and lamivudine (two nucleoside reverse transcriptase inhibitors given together as Combivir ®). The recommendation should be "considered" in cases of short duration exposure involving a few drops of blood on mucus membranes or non-intact skin, from an individual with a high viral load.

The third recommendation is to "recommend" the basic regimen. The basic regimen is "recommended" in the case of a large volume or long duration exposure from an individual with a low viral load. The last recommendation is to "recommend" an expanded regimen. The expanded regimen is six weeks of zidovudine and lamivudine, but also includes the addition of either indinavir or nelfinavir (both protease inhibitors) for the duration of the therapy. The expanded regimen is recommended for large or severe exposures to an unknown (or HIV-positive high viral load) source or HIV-positive high viral load source.

The Problem

In many third world countries the medical system or environment is not developed enough to easily determine step two of the CDC's process (determine sources of HIV status). Source patients may be unavailable for testing and risk-assessment, or may have no knowledge of an existing infection. The logistics of arranging an HIV test for the source are problematic, and the test may be unavailable. In addition, the source may be reluctant to consent to testing because of the social stigma surrounding the diagnosis. In certain Sub-Saharan African nations the HIV incidence is reported to be up to 35%, and some sub-groups of the population have reported rates of up to 68%. [12] Based on the high infection rates one should assume in Sub-Saharan Africa that the HIV status of the source patient is positive. Similar difficulties in employing the CDC recommendations in such circumstances have been previously addressed.[13]

When unknown source states is factored into step 2 of the guideline, several types of exposure should be considered for HIV PEP with the expanded regimen. These exposures include blood or body fluids on mucous membranes or non-intact skin, puncture wound with a solid or large bore hollow needle which has visible source patient blood on it, or puncture wound from a needle used in the source patient's artery or vein.

Another potential exposure faced by Special Forces soldiers in a third world setting is blood or blood products for medical purposes.[14] A review of the Armed Forces Medical Intelligence Center *Medical Environmental Disease Intelligence and Countermeasures* CD-ROM demonstrates that no Sub-Saharan African countries have safe blood supplies. However, a severely ill or injured soldier may have to rely on local blood or

Our Solution

The 3d Special Forces Group (Airborne) is oriented to training and operations in Africa. Due to the close associations between Special Forces soldiers and the host-nation military and civilian populations of many countries in Africa, we became co0ncerned about potential occupational exposures to HIV-infected blood or body fluids. Occupational exposures can occur in many different scenarios. While doing medical training for host-nationals the unit medic may be exposed through a needle stick. Both medical and non-medical soldiers could be exposed while caring for injured civilians or host nation soldiers. The potential for exposure to blood or body fluids is high while conducting humanitarian demining missions or explosives training due to the nature of blast injuries. This case presentation arose from injuries sustained while resisting a robbery attempt.

We developed a program in which each medic who deploys to Africa carries a five-day supply of zidovudine, lamivudine, and nelfinavir. The medics are instructed orally and in writing (on a reference sheet issued with the medications) on the indications, dosage, and side effects of the PEP medications. A bottle of loperamide is included in the kit to help control the gasterointestinal side effects of HIV PEP medications. The medics are instructed to start HIV PEP within one hour of a significant exposure and start planning for the evacuation of the patient to the United States for continued therapy. Their reference sheet also directs universal precautions when providing medical care and encourages immediate scrubbing and irrigation of wounds with soap and water.

Discussion

While implementation of an HIV PEP program is important in maintaining the health of our soldiers, it should be done in a controlled fashion. In the case of U.S. Army Special Forces soldiers, the HIV PEP medications are likely to be administered by a Special Forces Medical Sergeant. A medic then will have to start the treatment under a strict protocol, and without the presence of a physician. The current protocol has been designed to ensure that there are adequate controls on the issue of the medications and that the medics, battalion surgeons, and battalion physician's assistants are fully educated regarding their indications, contraindications, and side effects.

Any further protocol development must address several issues. The first is to insure that the medications are used only for indicated significant exposures. This involves training the providers on the definition of what constitutes a significant exposure. Casual contact with HIV positive individuals and exposure to animal blood or body fluids do not pose a risk for HIV transmission. While unprotected sexual contact with host nationals is a risk for HIV transmission, it can be mitigated by education and condom distribution. This does not constitute an occupational exposure.

The second issue is the side effect profile of the medications. Patients frequently discontinue HIV PEP due to the gastrointestinal side effects that include nausea, abdominal pain, cramping, and diarrhea. Medical providers must be made aware of these side effects and available treatment options. They should also be prepared to counsel their patient on the expected symptoms and methods of treatment to ameliorate the side effects.

Efforts should also be made to educate the patient's co-workers that though exposed, the patient is not a transmission risk via casual contact

Conclusion

The issue of HIV post-exposure prophylaxis is important in the civilian management of occupational exposures to contaminated blood and body fluids.[2,7,15,16,17] The guidelines published by the CDC are intended for healthcare workers in the U.S. who have the resources of a highly developed medical system to draw upon. In contrast, U.S. special operations forces soldiers often operate in third world countries with rudimentary medical systems and high HIV rates. The potential for occupational exposure (even to non-medical personnel) is high. Our program ensures that our soldiers are aware and have access to the latest recommendations involving HIV PEP. By doing so, we will continue to "conserve the fighting strength" of our nation's most highly trained soldiers.

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The Rescue of Gunfighter 82

William E. Brown, Jr.

Abstract

When an aircraft went down in Southeast Asia, massive resources were mobilized to recover the aircrew. Often, it was a race between United States forces and the enemy to see who could get there first. Predictably, the US determination to rescue aircrew led to a target-rich environment for the enemy, with ambushes and antiaircraft traps. In the end, US efforts often depended upon a lone junior enlisted pararescueman going down a hoist to make someone else's problem his own.

The crews of the "Jolly 30" and the "Gunfighter 82" celebrate after the rescue in 1971. From left: Staff Sgt William Brown, Jr., Staff Sgt William Lyles, the pilot Lt Col Clyde Bennett, Lt Col Arthur Blissett, Lt Michael Murray, Sgt Dennis Williamson, and co-pilot Maj Don Roston
Photo courtesy of William Brown, Jr.

The 40th Aerospace Rescue and Recovery Service (ARRS), the squadron of Sikorsky HH-53 "Super Jolly Greens" in which I served as a pararescueman, was on alert 24 hours a day throughout the year. We had just completed a 36 hour stint as "high bird," knowing that if a mission were now called, we would be the first in, or "Bluebird," for any air rescue attempts made over the Ho Chi Minh Trail, Laos or the western side of North Vietnam. The next day would be December 19, 1971, and all was calm when our rescue crew went to bed at Nakhon Phanom Air Base, Thailand.

We were awakened about midnight and told to report to Intelligence for a briefing. An American aircrew had been shot down, and we were to serve as low bird on the rescue mission. I immediately remembered that as we changed from high bird to low bird, I changed positions from No. 1 PJ (pararescueman) to No. 2 PJ. That meant if one of the PJs were needed on the ground to make a rescue, provide medical care or support a pilot, I would not be the one to go.

We jumped out of bed, put on our clothes, and waited only seconds for the truck that took us to Intelligence for briefing. After passing the security checks, we entered the intelligence center at Nakhon Phanom Air Base, Thailand, where much of the intelligence gathered along the Ho Chi Minh Trail was processed. Charts and maps were on every wall. In the front was an Air Force officer, and behind him were some familiar maps of Laos. When we looked at them we realized that this mission was not going to be easy. The maps were covered with up to 100 green and red dots, with intersecting circles around each. The dots represented anti-aircraft guns and SAM sites. The intelligence officer told us we were to attempt the rescue of two F-4 Phantom pilots shot down by SAMs while bombing the Mu Gia Pass. The attempt would be at first light, and we would be approaching the area under cover of darkness. The pass, about four miles long, was a well-known target for U.S. fighter-bombers. It was a place where the trail became congested as it passed through the narrow valley with 1,500-foot cliffs on each side. These cliffs were pockmarked with caves that housed NVA radar-guided anti-aircraft guns. Mu Gia Pass was a test for the best of our pilots.

Intelligence did not know the exact location of the down pilots. The men had stablished radio contact with an OV-10 FAC tat was circling over the area offering moral support and a link to safety. Intelligence also sid the area contained enemy troop concentrations, multiple SAM sites and anti-aircraft guns. It was the same area where on Deember 1969, Boxer 22 had been rescued. Over a three-day period, 10 helicopters and nearly 40 pararescuemen attempted to recover the crew of that F-4C.

At the flight line it was business as usal — a little joking to relieve stress and a long preflight check to ensure all systems were functioning properly. We were glad to be flying with our aircraft commander, Lt Col Clyde Bennett, and co-pilot Major Don Roston. We knew if the going got rough, these two pilots would not back down in the face of enemy fire. The flight engineer, William Lyles also had flown many alert missions. My fellow pararescueman, Dennis "Denny" Williamson, was my buddy from scuba school and someone I knew I could count on.

Before takeoff, I asked Denny if he wanted to change positions, from No. 1 PJ to No. 2. He agreed, so I prepared my gear to ride the hoist down into enemy territory. A CAR-15 with 200 rounds of ammo, two radios with six backup batteries, one quart of water in flasks, trauma bandages, pen flares, maps and a Randal knife made up the gear I would carry if I had to ride the hoist into the jungle. I made sure everything was in working order, and rechecked the knots on a 10-ft section of rope on which I had secured a snap link at each end. One end would be hooked into the hoist support with the other left free to snap onto a pilot's parachute harness should a quick retrieval become necessary.

After preflight checks, we took off straight for Mu Gia Pass, about an 80-minute flight. We were supported by more than 30 aircraft to assure a successful recovery. F-4s flying MiG combat air patrol would be circling the area to prevent a loss of any rescue unit, as had happened in January 1970 when a Jolly Green was shot down. We would have Republic F-105G "Wild Weasels" to take care of the SAM sites. The ever-reliable Douglas A-1E "Sandy" aircraft loaded with anti-personnel bombs and other weapons would be on the scene as well, locating, circling, and protecting the survivors. The OV-10 also would continue to circle the area, talking with the survivors and rescue forces. C-130 " King" birds would be present to maintain contact with MACV headquarters and refuel the Jolly Green's gas tanks.

En route to the crash site, two of Jolly 30's crewman are positioned next to one of the chopper's three 7.62mm miniguns, which could fire up to 4,000 rounds per minute.
Photo courtesy of William Brown, Jr.

While enroute, we loaded our miniguns. Each Jolly had three 7.62-millimeter miniguns capable of firing 2000 or 4000 rounds per minute. The best option for defense was the rear mounted gun, located on the ramp of the helicopter. From there, a PJ in a gun tub could burst fire the minigun and serve as a stinger at the end of the helicopter. During the rescue attempt, however, we had to swing the minigun — designed to fire out the

rescue door — away from its position, so we would not be able to use it for a time. Loading the guns in the dark was a skill acquired by every PJ, since most approaches to missions were before dawn.

Once clearance was given, we fired the guns into the blackness. Jolly 36, which was serving as our high bird, left a trail of red dots falling thousands of feet into the jungle below. We began a three-mile circle in a "safe" area over Laos, where no anti-aircraft guns or SAMs had been reported. The helicopters were to remain in this pattern, circling at 10,000 feet, until the survivors were located and the Sandy pilots determined it was safe to approach the rescue site.

We knew the jungle canopy must have been thick, because even though we could hear the "Bravo" (back seat) survivor on the radio, no one could get a visual fix on his position. The "Alpha" (front seat) survivor was easily located, hanging high in a tree, unable to get out of his parachute harness and climb down. We knew his rescue would be tricky. There was signal smoke from Bravo, but it was difficult to see, since it dissipated as it drifted upward. Both survivors had passed the identifier test used by the Air Force, answering their personal questions correctly. The rescue attempt was about ready to start. The final touch came when a Sandy flew over the area at low speed and did not receive any ground fire. It seemed the troop concentration intelligence had warned about were a few miles away, with thick jungle and mountainous terrain between the pilots and the enemy camp. However, the ARRS crews had been caught before in traps laid by the enemy, and this rescue would be accomplished like all others — with full combat support.

We circled as the sun rose high in the pass and mountains. It was a lovely site — thick green trees and mountains that would be excellent for sport climbing. From the air it looked peaceful, even though we knew the area was controlled by NVA regulars. Monitoring the radios, we heard the lead Sandy signal that it was time for the rescue. Run-ins began with a fast helicopter dive to treetop level. The drop is similar to the longest roller coaster ride in the world, with a G-force ending that requires you to plant your feet in order to remain standing during the transition from vertical to horizontal flight. We flew at 200 mile per hour at treetop level with the doors on the helicopter open, the wind whipping through the aircraft so loud that you could not hear yourself yell. The radio blasted instructions to the pilot about distance to the survivors — eight miles, six miles, four miles, closer and closer. We had to jump high trees, causing every crewmember to leave his seat and bless the inventor of the safety tie-down strap.

Anxiety ran high. We were remembering our training, remembering commands, watching other crewmembers, anticipating the Jolly slowing to a hover, when the danger would increase tenfold. This would be the pinnacle of a year's worth of training, the reason we served in the Air Force, the opportunity to bring home an American pilot, to snatch him from the hands of the enemy. Would we be in the fight of our lives, with small arms rounds popping through the thin skin of the helicopter? Would we make it back alive?

The Sandy lead told Colonel Bennett that straight-ahead, three-quarters of a mile, in a clump of higher trees at the one o'clock position, was the Bravo survivor. The Jolly began to slow and flare out toward a hover. As the trees came into focus, we saw that the canopy was thick. The Sandys began circling the Jolly, weaving around, attempting to draw small arms fire. Jolly 30 was in a hover by then. The Bravo survivor said over the radio he could hear the helicopter but could not see it. We hovered around the general area until he could see the helicopter over his head.

We lowered the jungle penetrator seat at 100 feet per minute. It took more than two minutes to reach the ground. Bravo radioed that he could not see it — the canopy and vines were too thick. Colonel Bennett told Sergeant Lyles to bring up the hoist and to send down a PJ to attempt the rescue. My time had come.

As we waited for the hoist to return to the chopper, I rechecked everything. Finally, it was back up. I quickly strapped myself in and began the descent. After exiting the helicopter I saw how exposed we were. Sergeant Lyles lowered me onto the jungle. I banged through the trees, pushing the jungle away from me. My weight brought me down fast, and I crashed into the jungle floor, stood up, and caught sight of Lieutenant Murray, the Bravo survivor. I had come down through the trees less than 30 yards away, but he still had not seen me. I jumped up and down, waving my arms but he continued to look only up at the helicopter. Leaving the security of the hoist, I ran toward him. Finally, when I got within ten feet, he saw me. His face was full of fright, but he realized I was not the enemy. I signaled for him to follow me. We could not speak to each other because my helmet was on and I was monitoring the radio.

Ascending to the helicopter, we broke through the tree-line and were exposed again. We were not fired on, and the Sandys continued to circle the Jolly at

close range. If there were any enemy on the ground, they would surely know where we were because of the noise. Sergeant Lyles pulled us into the helicopter. Lieutenant Murray took a seat on one of the bunks while we switched our attention to the Alpha survivor.

The Alpha survivor remained suspended in a tree, not far from where we had recovered his rear-seater. When Jolly 30 hovered over in his direction, Sergeant Lyles and I peered into the trees and saw the pilot. He was 150 feet below the Jolly, with shroud lines and chute silk enveloping him, the tree and other nearby trees. I attached my snap link rope to the penetrator, thinking it would be difficult to get the pilot into the hoist in midair.

I could not talk to Lyles because my radio was set on the rescue frequency and Lyles was on the intercom of Jolly 30. He gave me the hand signal to prepare to be lowered, and I gave him the thumbs up. Within seconds I was next to Lieutenant Colonel Arthur Blissett, the pilot. He tried to reach for me and the penetrator, but failed. Lyles instructed the helicopter pilot to adjust position, and I swung from side to side. Grabbing the parachute lines, I pulled my weight toward the pilot. When I was near enough, I quickly snap-linked to his parachute harness.

Lyles moved the hoist in an attempt to get closer to the pilot. Now that I was hooked onto him, I turned upside down, hanging by the hoist and wrapped in shroud lines, I radioed the crew that I had the survivor on the hoist, which was a signal to begin lifting us upward — but the parachute lines were tangled in my gear, around the hoist, the pilot and me, keeping us from being pulled up. They sprang apart like guitar strings. I grabbed my knife strapped to my calf and began to cut the taut parachute lines.

I could not see Blissett; he was below me attached to the hoist by my homemade device. I hoped my knots would hold and he would not fall to his death. We were in a hover over the survivor for three or four minutes during that work, but still there was no ground fire. Sergeant Lyles drew us up and brought first me and then Blissett into the Jolly.

We informed Colonel Bennett that both survivors were safely on board, as Jolly 30 began the dangerous exit from the scene. We followed the course behind the three Sandys, that flew very slowly to attract any ground fire before the Jolly passed over. After that, we picked up speed, manned the miniguns and listen to the F-4s draw anti-aircraft fire and attention away from the rescue forces. We stayed on the treetops out of the immediate rescue area, following the course plotted by Intelligence, gaining speed until the Sandy lead told us to go to altitude.

In the Jolly we began to relax. With each minute we were farther from the Mu Gia Pass, farther from immediate danger and the enemy. Lieutenant Murray had an ejection injury, and was treated by Sergeant Williamson en route. As Colonel Blissett rested on a cot, we could hear the crew's voices, excited and joyful at the accomplishment. "Shit hot!" was called out more than once over the radio by Sandy, King, and Phantom pilots. The joy passed along the airwaves throughout Laos. There would be celebrating that night in the rescue forces. As we approached Thailand, we unloaded the miniguns and prepared for a flyby of the flight line. Already some 150 fellow rescue men, pilots, mechanics, avionics technicians, medics and other support specialists were there to celebrate the rescue. We landed and taxied to our spot on the tarmac, shutting down the engines. Colonel Blissett, then Lieutenant Murray, exited and got sprayed with champagne. Next came the rescue aircraft commander, Clyde Bennett, splashed with buckets of water like the coach of the Super Bowl scene. Bennett had held Jolly 30 in a hover over enemy territory for nearly 10 minutes in full exposure to any enemy on the ridge.

As the remainder of the crew emerged, we gathered in front of the Jolly 30 for a picture, handshakes and embraces. The survivors were then taken by ambulance to the hospital. The ground crew parked the Jolly, and the maintenance men immediately began running their checks.

I never had an opportunity to talk with the rescued pilots until years later. After being discharged from the Air Force, I received the Distinguish Flying Cross for my efforts in the rescue of Gunfighter 82. My father, a member and later commander of the Ohio department of AMVETS, contacted the Air Force in 1975 and asked them to locate Colonel Blissett. During a surprise ceremony at the Ohio AMVETS convention in Columbus, Ohio, Colonel Blissett thanked me and presented me with the Distinguished Flying Cross in front of my family and friends. Gunfighter 82 finally was a mission complete.

The author, Bill Brown, RN, MS, CEN, NREMT-P is now the Executive Director of the National Registry of EMTs. He began his EMS career as a USAF Pararescueman. After leaving the service he graduated from Youngstown State University with two Bachelors Degrees, one in Nursing the other in Law Enforcement. He received a Masters Degree in Health and Safety Education from Indiana University in 1979. He worked for over 10 years as an emergency department nurse and as a street level paramedic. Following graduation from Indiana University, Mr. Brown became the Paramedic Program Director at Youngstown State University in 1979. In 1985 he began working for the National Registry of EMTs as the Advanced Level Certification Coordinator. In 1989 he became the Executive Director of the National Registry. Since that time he has served on the writing committees for all four national DOT EMT education programs from First Responder through Paramedic. He was on the Task Force for the EMS Education and Practice Blueprint and the EMS Education Agenda for the Future. Mr. Brown has worked with the Special Forces Paramedic Course at Ft. Bragg and continues to support medical education standards for members of the Special Forces community. He is committed to holding the standards for SOF medics as equal to those of every Parmedic in the nation.

This photo shows an HC-130 in the background and an HH-53 in the foreground readying for a rescue mission

The OV-10A Bronco is a twin-turboprop short takeoff and landing aircraft conceived by the Marine Corps and developed under an Air Force, Navy, and Marine Corps tri-service program. The first production OV-10A was ordered in 1966 and its initial flight took place in August 1967.

The Bronco's mission capabilities include observation, forward air control, helicopter escort, armed reconnaissance, gunfire spotting, utility and limited ground attack. However, the USAF acquired the Bronco primarily as a forward air control (FAC) aircraft. Adding to its versatility is a rear fuselage compartment with a capacity of 3,200 pounds of cargo, five combat-equipped troops, or two litter patients and a medical attendant.

The first USAF OV-10As destined for combat arrived in Vietnam on July 31, 1968. A total of 157 OV-10As were delivered to the USAF before production ended in April 1969.

First flown in May 1958, the Phantom II originally was developed for U.S. Navy fleet defense and entered

service in 1961. The USAF evaluated it for close air support, interdiction, and counter-air operations and, in 1962, approved a USAF version. The USAF's Phantom II, designated F-4C, made its first flight on May 27, 1963. Production deliveries began in November 1963. In its air-to-ground role the F-4 could carry twice the normal bomb load of a WW II B-17. USAF F-4s also flew reconnaissance and "Wild Weasel" anti-aircraft missile suppression missions.

The HH-53 Super Jolly Green Giant was the backbone of air rescue operations for downed pilots. It

was capable of air refueling from a tanker-modified C-130 to extend its mission time. It was large and heavy enough that it usually taxied to a runway (given that one was available) and did a rolling takeoff more reminiscent of a fixed wing aircraft than a helicopter.

Below are excerpts from articles out of the *Pacific Stars and Stripes* and *Seventh Air Force News*.

40th ARRS Picks up pair of downed pilots

Two Air Force aircrew members were returned from the jungles of Laos recently by American rescue forces after their aircraft was hit by a surface to air missile (SAM).

They were flying a F-4 Phantom from the 366th Tactical Fighter Wing, DaNang Airfield., on a reconnaissance escort mission over North Vietnam Dec.17, when struck by the missile. They went down about five miles west of Mu Gia Pass in Laos.

The pilot, Lt. Col. Arthur S. Blissett, and the back seater, 1st Lt. Michael H. Murray, successfully ejected from the stricken aircraft and landed in dense mountainous jungle terrain. Voice contact was established almost immediately with the downed aircrew by forward air controllers operating in the area and an HC-130 Kingbird maintained the contact throughout the night. The rescue force planned to launch for the pick-up at first light.

Colonel Blissett and Lieutenant Murray both reported that they were uninjured.

To insure their safety during the night, U.S. fighter aircraft conducted bombing and strafing strikes on the area surrounding the men who had landed about 3,500 feet apart. Colonel Blissett landed in the tree tops and spent the night there rather than risk a drop of some 70 feet to the ground.

In the morning an A-1 Sandy aircraft spotted both parachutes and directed an HH-53 Super Jolly Green Giant helicopter to the area. After spotting Colonel Blissett safely tied to his tree top, 70-feet off the ground, the Super Jolly of the 40th Aerospace Rescue and Recovery Squadron went to look for Lieutenant Murray.

Radio contact with the lieutenant indicated that the chopper was right above him but they could not see him. He was lifted to safety.

Getting Colonel Blissett from atop the jungle canopy proved to be a bit more difficult. A pararescueman was lowered on the jungle penetrator and assisted him in cutting parachute lines that he had used in tying himself to the tree. After hacking through the lines and the heavy foliage to which the colonel had attached himself, the pair was hoisted from their tree top perch.

"I think we brought half that tree up with us" was Colonel Blissett's remark following the successful rescue.

Members of the crew of the HH-53 making the rescue were: Maj. Clyde E. Bennett, aircraft commander; Maj Donald L. Roston, pilot; A1C William T. Lyles, flight engineer; and pararescuemen MSgt Daniel L. Schmidt, SSgt William E. Brown and Sgt Dennis E. Williamson.

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Lt Murray receives medical treatment aboard the HH-53 Super Jolly Green Giant following his rescue from the Laotian jungle.

Refractive Surgery in the Warfighter Community

Scott Barnes, MD

Abstract

Depending on one's perspective, laser refractive eye surgery is either "cosmetic" or "mission-enhancing." Long sought in the civilian community to free one from the constraints of glasses, this surgery can have a tremendous effect in enhancing a soldier's performance. This unique procedure is performed on a soldier who is neither ill nor injured, yet can result in a better -performing soldier.
However, the significant cost and logistic support of a refractive surgery program limit the number of people able to benefit. A reasonable approach is offering the surgery to targeted military members, based on their operational requirements.

The US Navy began its laser refractive eye surgery program in 1993 at Balboa Naval Medical Center in San Diego, CA under the direction of CAPT Steve Schallhorn. The tremendous success of photo refractive keratectomy (PRK) in this original warfighter program has led to similar ventures in the Army and Air Force.

The US Army has embarked on a mission designated the Warfighter Refractive Eye Surgery Program (WRESP). The first WRESP center became operational at Fort Bragg in May 2000. The immediate goal is to have refractive centers at Fort Hood, Fort Campbell, Tripler Army Medical Center, and Landstuhl Army Regional Medical Center operational in FY 2001. There also will be refractive centers at Walter Reed and Madigan Army Medical Centers, although these are not part of the WRESP, dedicated primarily to teaching and research.

Criticisms that have been directed at military involvement in refractive surgery often lead to a misunderstanding on who should or should not be eligible for this surgery. A common belief is that refractive surgery is a "cosmetic" surgical procedure only designed to free one from wearing corrective glasses, and that the military should not be in the "cosmetic" business. However, this is a technique for enhancement of soldier readiness; the lack of dependence on an optical corrective device while performing physically demanding tasks in unfavorable environments experiencing harsh weather conditions could prove invaluable.

Most medical/surgical procedures are designed to repair a sick or injured soldier. The field of preventative medicine is designed to avoid illness or injury (vaccinations, sanitation measures, etc.). However, laser refractive surgery has the promise of taking soldiers who are neither ill nor injured and enhancing their military readiness as well as increasing their confidence in executing difficult missions in which prescription eyeglasses may be detrimental. This is the reason why the Army has begun this multimillion-dollar initiative to reduce the dependency upon eyeglasses for certain military populations.

Current funding will allow the treatment of approximately 1500 patients (or 3000 laser procedures assuming each patient has both eyes treated) at each WRESP center every fiscal year. The Fort Bragg center was receiving 30-40 applications each day and the waiting list had grown to over 1000 patients in the first few months of operation - obviously the demand far exceeds the availability. Careful management in patient selection will be critical to ensure this program addresses improved military readiness rather than simply providing the surgery to those in whom wearing eyeglasses does not really have a detrimental effect on job performance.

The intent of the program is to provide limited treatment to soldiers whose military readiness would be most enhanced through a reduction in dependency on glasses (i.e. rapid deployers, extended time in the field, airborne units, underwater operations, etc.) This is not a program designed for every soldier, retiree, and dependent who wears eyeglasses and general guidelines are being developed to prioritize allocations based primarily on the unique needs of individual units. The current priority goes to active duty soldiers with an 18, 11, 12, or 13 series MOS from USASOC and 18th Airborne Corps stationed at Fort Bragg. As more WRESP centers become operational, prioritization guidelines may change.

The two refractive centers at Walter Reed and Madigan Army Medical Centers will not fall under the WRESP funding/restrictions and, based on their mission to train and produce research, may have the capability to treat different populations if appropriate subjects cannot be found within the active duty ranks (different age groups, unusual refractive errors, etc.).

The Navy operates laser centers at Balboa, Portsmouth, and Bethesda Hospitals and is planning on centers in Bremerton, WA and Camp LeJeune, NC. Additionally, the Air Force operates laser centers at Wilford Hall Medical Center and Wright-Patterson AFB with a center at the Air Force Academy set to open in February-March 2001. With the addition of seven Army centers, the Department of Defense has plans for at least 15 laser eye surgery centers. Once again, the direction of progress has been dictated by the special operations forces as they had the collective "vision" to realize the military potential of an exciting surgical procedure!

MAJ Scott Barnes, USASOC Deputy Surgeon, had PRK while serving as the Group Surgeon, 1st SFG(A) in 1993. This led to a residency in ophthalmology at Brooke Army Medical Center (Ft Sam Houston, TX) 95-98 with the goal of bringing refractive surgery to the special operations community. MAJ Barnes will be going to a cornea/ refractive surgery fellowship in JUL 2002.

A SPECIAL FORCES MEDIC IN VIETNAM - THE EARLY DAYS

John F. Mullins

Abstract

U.S. Army Special Forces medical training was a "sink or swim" proposition in the early 1960s. Although the initial didactic portion was rigorous, nearly all passed. The OJT proved to be unstructured and initially yielded low value. The final phase was Dog Lab - an intense learning experience in a humane environment. When the medic was deployed, he was on his own professionally, and no further training was available. SF medics felt inadequate to the task, and with no correction or feedback, felt they were stagnating. The medics were significantly stressed by the gap between expectation and reality in a hostile operational environment.

Team A-18 from "B" Company of the newly formed 5th Special Forces Group deployed to the Republic of Vietnam in February 1963. I was the junior medic on that team, a newly promoted specialist fourth class fresh out of training.

By that time Special Forces had been in Vietnam in one form or another for six years: training what would later become the Vietnamese Special Forces (LLDB), forming Mountain Commando units, giving Ranger training to units of the Vietnamese Army. But the mission for which we would become best known, the Civilian Irregular Defense Group (CIDG) program, was scarcely a year old.

The planners in Saigon were mindful of the fact that to control the Central Highlands of South Vietnam was to control the country. Vietnamese presence in that area was concentrated in the coastal lowlands and a few larger cities in the upland. Indigenous hill people of Indo-Malayan stock (called Montagnards by the French and *Moi* (savages) by the Vietnamese) populated the rest of the area. The Montagnards were a tribal people, subsisting on hunting and slash-and-burn agriculture. They were animists, worshiping the spirits of the land and the animals. French missionaries had worked with the tribes and some professed Christianity, though the old ways were never too far beneath the surface. The 'Yards, as we called them, hated the Vietnamese, both North and South, and the Vietnamese returned the favor with a vengeance.

The French had, during their ill-fated war, made good use of the Montagnards. The CIA, who largely ran the counterinsurgency effort, thought that the Special Forces could do the same. A test program was begun in Darlac Province, a program that was successful beyond even the hopes of the Agency.

With the success of the effort in Darlac, the Agency envisioned a large-scale program wherein minority groups of all kinds would be recruited, trained, equipped and advised by the Special Forces. Of particular importance was the establishment of the border camp program, wherein supplies coming from North Vietnam could be interdicted before reaching the Viet Cong combatants.

Both the 7th Special Forces Group at Fort Bragg and the 1st Special Forces Group in Okinawa provided teams, with the 1st being most heavily tasked. Soon it became apparent that the 1st could not keep up with the demand, particularly when they were also providing teams for missions throughout the Far East. The 7th was also heavily involved in missions throughout Central and South America. More troops would be needed. President Kennedy had just authorized the expansion of the Special Forces, with a new group, the 5th, just now taking shape at Fort Bragg. It seemed just the ticket.

The first teams from "A" Company of the 5th deployed only months after the group was formed. Then it was "B" Company's turn.

But first, a little personal background that may be of interest to today's soldiers. Special Operations medics probably don't realize how ad-hoc, run-on-a-shoestring the training was back in those days. The wonder is not that it worked so well, but that it worked at all.

I was recruited out of the 101st Airborne Division in the summer of 1961. It has long amused me to hear about "how it was in the old days", how to be in the Special Forces you had to be on your second hitch, had to be at least an E-5, and so forth and so on. I was a Private First Class, and had been in the Army little more than a year. Many of the people I joined in what was then Training Company at Smoke Bomb Hill in Fort Bragg (yes, Training Company – we weren't numerous enough to comprise a training group) had even less time in the military. Some were not even Airborne qualified. Their grunts of exertion undergoing pre-airborne under the tender ministrations of SSG Lionel (quite naturally dubbed Choo-Choo) Pinn were music to my airborne-qualified ears.

Soon after in-processing, I was sent to Commo School. I had a high score on that particular test; hence I must have been a suitable candidate, right? Wrong. After a week of listening to dit-dit-dah-dit, I was ready to pull down the walls. My instructors were even more tired of me than I was of them.

Okay, Mullins, what do you want to be? The choices were demolitions, weapons, and medic. I obviously wasn't senior enough or experienced enough to become an operations and intelligence type. I'd just come from being a machine-gunner in the 101st, and was heartily tired of carrying the 1919A-6 around, so didn't care for the obvious choice of light or heavy weapons. Besides, I wanted to do something different.

Demolitions was widely regarded as where you went when you flunked out of all the other Special Forces schools, a slight that was certainly a sign of ignorance of the skills involved in being a demolitionist. Besides, someone had told me that we would be attending school in the company of all sorts of women if we went to Fort Sam Houston, Texas. I was eighteen years old. I volunteered to be a medic. Go figure.

I understand that Fort Sam later became a good training experience for S.F. medics. It wasn't particularly at this early stage. Obviously, we had to gain the basics, and basics were what they taught. We took the basic aidman class, then the advanced aidman, and learned some anatomy and physiology, medical terminology, bandaging and splinting, injections and venipuncture, and a very great deal of litter bearing. Not to brag, but we were a pretty sharp bunch of troops, and we breezed through the instruction, becoming bored and thus prone to getting in trouble. I'm sure the command and staff at Fort Sam Houston were as happy to see us leave, as we were to depart.

As an aside, I did meet one of those women, who became my wife. Thus I gained the ability, when sergeants would quote the old saw that "If the Army had wanted you to have a wife, they would have issued you one," to reply, *It did*.

Next came on-the-job training at Martin Army Hospital in Fort Benning. Just as at Fort Sam, they really didn't know what to do with us. We were supposed to be getting hands-on training in emergency care. We got to change bedpans, work the wards, observe a lot, do very little. My net experience in the emergency room out of the eight weeks of OJT was little over one week. There at least, a young doctor who knew what we might soon be facing let me do a little stitching, a skill at which I was becoming quite talented.

Thus fully qualified, at least according to Army standards, we returned to Fort Bragg. There we found out just how little we actually knew.

We'd started with forty people in the class. All forty returned to Fort Bragg – no dropouts, no flunks, no deciding medicine wasn't for you.

The people at the Special Forces Surgical Lab, fondly referred to as "Dog Lab", would do that for you. And they did.

The first hint that things were going to be completely different was when the doctor, a Captain in the Army and a skilled surgeon, came to the podium. He put his cigar down and started talking, and exactly fifty minutes later picked his cigar back up and left. No questions, no clarifications. And if you didn't have everything he'd said in your notes, you were in deep trouble. Over the days to follow he covered symptoms, indications, diagnosis, treatment and long-term care for every disease we could ever expect to encounter. On Friday you were tested. You had to know it, dead-bang, down-pat. Or you flunked. We lost eight people the first week. And so it went. The doctor knew that we'd be expected to operate on at least a first-year intern level, and tried to pump the knowledge of a four-year medical school into our heads in an eight-week course. Of course there were casualties. Lots of them.

The NCO instructors weren't a bit more merciful. Experienced medical sergeants all, many with combat experience reaching back to World War II and

Korea, some of whom had been on the White Star teams in Laos and early deployments to Vietnam. They knew full well what we'd be facing, and how much the teams would depend upon us. Mistakes were simply not acceptable. By the time we got to the actual surgical procedures block, we were down to twelve out of the original forty.

Now we came to the portion of the course for which the school got its nickname. We each got our patient, a scroungy mutt recruited from local pounds. Later on, the ASPCA complained enough about animal cruelty that the patients were changed to goats, but we were in that pre-political-correctness time when no one thought twice about working on dogs that were condemned to death in the first place.

On the dogs we practiced venous cut-downs, debridement of gunshot wounds, and field amputations. The dogs were, of course, thoroughly anesthetized when any procedure was performed, and otherwise led a pretty pampered life. You had to keep your dog alive, no matter what. No antibiotics were allowed – if the wound got infected you had to combat it using further debridement, phisohex soap, and disinfectants. If your dog died, you flunked. Simple as that. Most of us supplemented the dry dog food provided by the school with scraps from the mess hall or canned food bought from the commissary. To say this was a strain on limited finances would be woeful understatement. My pay at the time, including jump pay, separate rations, and housing allowance, was something like two hundred dollars a month, before taxes. My dog was living far better than I did.

Perhaps not too surprisingly, given the thinning our ranks had taken earlier, all twelve of us passed the surgical procedures portion of the course and were declared fit for duty. We were too exhausted to party. In the years following Dog Lab, I've attended dozens of Army schools, including three trips to the Defense Language Institute (once for Russian, which has to be the most cantankerous language in the world, save ours), and I have never again struggled as I did in those dilapidated wards close to Womack Army Hospital.

Next came Branch Training, what is now called the "Q" course. The instructors paid little attention to counterinsurgency techniques – our mission after all was to organize, equip, train and lead into combat guerrilla armies in the rear areas of the Soviet Union. The training culminated in a field exercise in the mountains of North Carolina, and was as GW-oriented as had been the training.

Thus at least nominally qualified, we were assigned to the various Special Forces Groups. A number of my compatriots went to Okinawa, an assignment I would have welcomed. Instead, I was assigned to B Company of the 5th, a short walk across Smoke Bomb Hill.

I'd like to say we then engaged in a whirlwind of further training. We were, after all, still not regarded as fully qualified Special Forces troopers. Instead of the full beret flash, we wore a little strip of cloth under the De Oppresso Liber crest. We had not yet received the coveted "3" suffix to our MOS. To get that you had to be cross-trained in at least two other skills, have participated in a number of field exercises culminating in a full-scale guerrilla warfare problem, and all sorts of other requirements.

We did get a little bit of cross training, but most of our time was taken up on post details. We picked up trash along Gruber Road, harvested the millions of pinecones that fell with merry abandon all over the great reservation, and mowed grass. Lots and lots of grass. The joke going around at the time was that you had to be at least a master sergeant E-8 to qualify for a power mower. Sergeants First Class got push mowers. The rest of us used sling blades. It actually wasn't much of a joke.

The situation was alleviated only slightly when my team was picked for deployment to Vietnam and we entered pre-mission training. Most of what I remember about pre-mission was the heavy emphasis on the French experience and how we were not going to make the same mistakes. We also studied Mao, got exposed to revolutionary warfare doctrine, and heard the horror stories about the lazy-ass, cowardly Vietnamese from NCOs who had returned from earlier tours. Obviously, our impression of the country and its people was heavily colored long before we got there. Some of it turned out to be true. Most of it was not.

Part of the day we took language training, half the team taking Vietnamese and the other half French. I took French, found that I had an unexpected affinity for languages, and was named the team interpreter.

Now we were fully qualified to go out and save the world, or at least that small portion of it represented by South Vietnam. How could we fail? We were the best-trained troops America had.

Looking back on it, I realize how woefully unprepared we really were. That whatever successes we had, and there were many, should be attributed to the quality of the men on the team. We were, however,

awarded the coveted "3" suffix and allowed to sew the full black-and-white flash on our berets. Perhaps it is a bit cynical to say, but I suspect the real reason we were allowed to do so was the concern that some pesky newsman might ask about the half-flash, and then write a story about how the Special Forces was sending unqualified people into combat.

We flew from Pope Air Force Base just outside Fort Bragg on a KC-135 tanker, seats facing backward, few windows, long and immensely boring. Stops at practically every base between Pope and Tan Son Nhut. Of course the plane "broke down" in Hawaii, as all of them did, giving us a day in Honolulu. It was my first glimpse of the tropics. If Vietnam looks like this, I thought, it can't be too bad.

Upon landing at Tan Son Nhut we were transported to downtown Saigon to be briefed by the commander of the U.S. Army Special Forces, Vietnam (Provisional), Colonel George C. Morton. We were the last teams to be processed through Saigon, as Colonel Morton and his staff were busy getting the Nha Trang base ready for the stream of troopers to come.

We then boarded a C-47 cargo plane and went up-country to Nha Trang, which was at that time a beautiful coastal city. The long, unspoiled beaches called to me. I wanted to take my first plunge into the South China Sea. Later, I did, and found it vastly overrated. Nha Trang did, however, give me my first opportunity to taste lobster. The place to go was called Francois, and was located in what was supposed to be bandit country up the coast and out of the city. Naturally, we piled into jeeps and blithely made the trip, as had dozens before us and hundreds would after. It was worth it.

It was policy at that time for A-Teams newly assigned to Vietnam to spend a month in on-the-job training in an existing camp. Ours was just outside Cam Ranh Bay. The team in place was TDY from Okinawa, and had been there about four months themselves.

While the other team members busied themselves learning the ropes, the senior medic, SSG Leo Violette, and I worked with SFC Skimmiehorn, the senior medic from the in-place team. Skimmiehorn was running a thriving sick-call program, with villagers from miles around somehow making their way to the dispensary for their first taste of modern medicine. The planners encouraged treating the locals as an excellent method of "winning the hearts and minds". It undoubtedly worked. Some of the best intelligence came from grateful villagers.

I immediately saw the value of the medical training imparted at such cost by the geniuses at Dog Lab. If there was a tropical disease that we didn't treat, it was only because that particular disease hadn't made it to Vietnam yet. Dengue fever, yaws, amoebic and bacillary dysentery, worms of every description, venereal diseases that had heretofore only been horror stories told by old soldiers, and malaria. Of course malaria. A lot of it.

Drugs that, in the States, would have been accompanied by chain-of-custody documents a mile long were unceremoniously dumped off the tailgate of resupply planes, and dispensed by medics with a minute fraction of the training and experience of doctors who would themselves have been loath to give them out. You asked for it, no matter how exotic, you got it.

One of the biggest problems we had was in winning over the local medicine men, what would now be called "non-traditional healers" whom we, of course, called witch doctors. They were deeply suspicious of us and resented the fact that the villagers were now turning to modern medicine. And we were horrified at some of the treatments they offered, most of which involved "sucking the evil spirits" out of the sufferers. Later I would learn to work with them instead of against them, to the mutual benefit of both parties.

This particular camp was regarded as a fairly safe one, the local Viet Cong having either fled or given up on attacking such a well-defended place whose fields of fire went out across the coastal plains as far as the weapons would shoot. But we still took casualties, mines and booby-traps mostly, and the occasional hasty ambush. It was after one of these that I got my first experience in combat surgery. A Strike Force trooper was brought in, his right buttock bleeding profusely from a huge hole blown in it by a grenade.

We had to get the bleeding stopped, and it only made sense, while we were in there, to remove all the grenade fragments and debride the destroyed flesh from the wound. Skimmiehorn assured us that if we didn't, the striker would likely die. He would be sent to a Vietnamese military hospital, very little care would be given; he would share a bed with probably three other soldiers, and would quickly succumb to massive infection. Skimmiehorn had been there longer than we had (I believe, on his second tour), and obviously knew what he was talking about.

I was appointed to administer anesthesia while Skimmiehorn and Violette operated. I had never be-

fore actually administered anesthesia, but that didn't stop me. I'd read enough about it. Couldn't be that difficult.

The choices for anesthesia at that time were Trilene® given as a drip inhalant, or sodium pentothal given as an injection. The striker had already been given morphine for the pain, so I thought it risky to follow with sodium pentothal. Besides, I had been assured that it was difficult to overdose a patient on Trilene, as it produced only a condition known as twilight sleep. Trilene had replaced ether in the Special Forces medic's toolbox after too many patients had been over-anesthetized with the latter.

I quickly saw why it was safer, though far less effective. I kept dripping the liquid into the inhaler, the striker kept breathing it, every once in a while Violette or Skimmiehorn would probe the wound, only to have the striker scream out in pain. More drip. More probe. More yells. I was seriously questioning my judgment, but was too far along on this course of action to change now. I had no idea what sodium pentothal would do atop not only the morphine but also the Trilene, and I wasn't going to find out.

After what seemed an eternity, the striker finally went under. We flipped him over and the senior medics went to work. Their light was a hissing gas lantern. Putting instruments in the upper tray of a pressure cooker and steaming them for an hour had sterilized their tools. Their operating room was a bamboo shack with rats running through the roof, droppings kept off the operating table by hanging a sheet above it.

Bleeders were quickly located, clamped and tied. The occasional chink of metal as fragments hit the emesis tray punctuated the distinctly non-surgeon-like comments of the two men. "Holy Shit, would you look at that mother!", "Grab this twisty little s.o.b., willya?", "Guy ain't gonna be doin' no prolonged sitting, is he?"

Luckily, the grenade had been an old M-2 pineapple, not a more modern M-26. Luckily, I say, because the fragments were relatively large and easy to find. The serrated wire pieces thrown by the M-26, with which I had to deal later, were tiny and almost impossible to find save by X-ray, and of course we didn't have X-rays.

After taking out some twelve pieces of grenade, tying off a half-dozen bleeders and removing perhaps a pound of destroyed flesh, the medics were done. I got to pack the wound with sterile gauze, bandage it, and then try to bring the striker back up from the anesthesia. As hard as it had been to get him down, it was worse getting him back up. I was seriously worried that he had been overdosed, saw my medical and military career swiftly going down the drain, could almost hear the stories that would be told about the dumb-ass medic who spoiled all the good work our makeshift surgeons had done by killing the patient anyway.

But he did slowly regain consciousness, had a good night's sleep, and was evacuated by C-47 the next day. I was saved, at least for the moment. I was told, years later, that he returned to duty at the camp with no more ill effect than having a large dimple in his butt.

Soon the month was up. We were ready, champing at the bit to go out to our own camp. Save the world from the evil communists. Bear any burden, fight any foe. Just like JFK had said.

There had been some talk about our staying in this particular camp, taking over from the Okinawa team. This would have freed up a more experienced team to open one of the border camps. Every single member of our team protested the idea. Frankly, we were getting bored to death. We didn't come to Vietnam to sit out the war in a safe area. Somehow our team leader, Captain Lawrence Hackley, managed to convince the powers-that-be that we should continue our original mission which was to go to a place in the Third Corps Tactical Zone and open up a new camp. That camp was to be called Loc Ninh.

The town of Loc Ninh is located in Binh Long Province, some 90 miles to the northwest of Saigon. It is nine miles from Cambodia where it juts into Vietnam in what later came to be called the Parrot's Beak region. To the south and east is the amorphous region known as War Zone C, a Viet Minh stronghold that now contained the largest grouping of main force Viet Cong in the area.

My first glimpse of Loc Ninh came from the door of the C-47 cargo plane that carried us from the OJT camp at Cam Ranh Bay, where we'd spent our first month in country. We'd been flying for what seemed to be hundreds of miles over unbroken jungle, my fervid imagination conjuring up the thousands of enemy troops down there, waiting for us. I was very glad we were flying high enough to avoid any small arms fire, that same imagination visualizing how it would be if bullets came up through the floor of the old bird.

The area around Loc Ninh transitioned from jungle to regular rows of trees through which, as we descended, I could actually see the ground beneath. Loc Ninh was at the center of a giant rubber plantation owned by the French tire company, Michelin. Not as bad as the jungle, my unskilled tactical mind was telling

me. At least you could see more than a few feet in front of you. Visibility was, in fact, excellent. The still-present French overseers took very good care of the plantation, regularly clearing away undergrowth and debris.

The airstrip, a well-maintained patch of macadam, seemed to rise to meet our wheels. The Gooney Bird had no problem in landing and stopping well before the rubber trees that lined the end of the strip. A short taxi to an old metal hangar, a quick off-load, and we were on our own.

We were twelve American soldiers, set down in an area that contained more VC than probably any other in Vietnam at the time, and we were armed with M-1 rifles. I'd been quite surprised; coming from the 101st Airborne Division where we carried the new M-14, to find out that Special Forces was still stuck with the M-1. Had thought that surely, once we were sent into a combat zone, we would be given something a little better than the old, semi-automatic eight-shot rifles that clearly had seen better days.

Wrong.

We did, of course, have 1911A1 Colt .45 pistols with two extra magazines as backup. And, oh yes, four M-2 fragmentation grenades. The pouches on our ammo belts contained ten clips of .30-06 for the M-1, and most of us supplemented that load with three or four clips slipped onto the sling of the rifle. We could, I estimated, have given a good fight to a platoon of Viet Cong Boy Scouts, and not much else.

And there, stacked in the old hangar, were enough supplies to equip a full battalion of troops, thoughtfully provided by our CIA overseers and guarded by a squad of Vietnamese local force troops. What a target we were! Probably about the only thing that saved us was that the Viet Cong's intelligence apparatus wasn't working all that well. Or perhaps it was so lucrative a target they suspected a trap.

The defenses around the hangar that was to be our home until the camp got built were a few dilapidated strands of barbed wire, a scattering of punji stakes, and ramshackle sandbag bunkers that would withstand perhaps one grenade explosion (or a heavy rock) before collapsing on the defenders.

We rummaged through the boxes and bags, coming up with all sorts of useful items. Concertina wire, which we quickly strung in a triple roll outside the existing perimeter. 1919A-6 machine guns, with which I was intimately familiar, went into strengthened bunkers, sited to provide overlapping fire. There were boxes of mines, but as we were not to stay at the hangar forever, only remaining there while the camp was being built, we opted not to use them.

Most important, to my mind, was a choice of personal weapons. Browning Automatic Rifles, M-1 and M-2 carbines, Grease Guns, and to my immense joy, real-live Thompson submachine guns. Too cool. Many times I'd passed by the massive statue that guarded the main entrance to Fort Bragg, a World War II paratrooper dubbed "Iron Mike". Iron Mike carried a Tommy Gun. Now I could too. I didn't understand why the older sergeants, most of whom had combat time in WWII, Korea, or both, turned up their noses at the Thompson and instead chose M-2 carbines.

The first night passed without incident, as did many more as March ground on into April. Our time was taken by building the camp, which was located below the bottom of the airstrip, in probably the worst tactical position of any in the area. Hills covered with rubber trees rose all around it. A small stream, which was to be our source of water, flowed through the middle. During the monsoons it became a river.

Even with my relative lack of experience, I could tell it wasn't a good place. And the seasoned sergeants were in an absolute uproar. To our questions, we were told that it was the only spot within miles that wasn't covered by rubber trees, and that the French had raised such hell in Saigon about having their precious trees cut down to accommodate a camp that the Diem Government had given in.

While the camp was being built, Leo Violette and I started with our sick call program. Soon we had even more patients than we'd been treating in the OJT camp. We started with Vietnamese soldiers and their families, and the word quickly spread. The line grew each day, worrying some of the team members, who thought it an excellent chance for Viet Cong infiltration.

Nights were spent on watch, or around a makeshift table engaged in conversation liberally lubricated by our inexhaustible supply of medical alcohol, mixed with whatever juice we could get our hands on. With the hangar, we'd inherited a one-eyed rooster so scrawny even the locals wouldn't eat him, a rooster who at all hours of the night would let go a series of crows that reverberated through the metal hangar like last-night's hangover rang through your head. Someone came up with the bright idea of getting the rooster drunk – maybe he'd sleep the entire night that way. Grab rooster, fill eyedropper with alcohol, open rooster's beak, trickle it down throat. Watch rooster. No effect. Grab rooster, repeat.

Rooster turns out to be a mean drunk. Flies at SFC Price, a veteran of the 11th Airborne, combat jump in the Philippines, Ranger in Korea type of guy. Big mistake. Price would have wrung his neck, had he not been more drunk than the rooster.

Finally the rooster collapses. Check vitals. Still breathing. At least we haven't killed him.

Rooster wakes up at four in the morning, only sound is a strangled squawk. If I hadn't known better, I'd have thought he was heaving his guts up just like I wanted to do. Rooster walks around all day with a bewildered look. I guessed that a bird headache might even be worse than mine.

Thereafter the rooster stayed well away from us when we started drinking.

As the camp was being built we started our CIDG recruitment and training. There were few Montagnards in this portion of Binh Long Province, the local Vietnamese showed little inclination to join, and there were none of the factions such as Hoa Hao that other teams had to draw from. There were, however, numbers of Cambodians. For years dissidents opposed to the Sihanouk regime had been taking refuge inside South Vietnam, and some of them saw the opportunity for training at the hands of the Special Forces as a way of preparing their army for later. One of these groups was called the *Khmer Kampuchea Krom*, which we naturally shortened to KKK. Staunchly anti-communist as well as anti-Sihanouk, they were ideal recruits. Given proper training and leadership, they turned out to be excellent fighters - intelligent, brave, loyal, and technically competent.

The ability to achieve technical competence was shown by the four Cambodians assigned as company medics. I've never seen anyone so quick on the uptake. By the time our tour was over, these guys were as competent as any U.S. –trained corpsman, at least in emergency medicine.

By the time the camp was ready for move-in, I was well on my way to becoming the dentist of choice for the Loc Ninh area. I, of course, had Novocain®, something the local dentist gave out only grudgingly and at a high cost. I'd been trained by some excellent army dentists on Smoke Bomb Hill, having been allowed to practice mandibular blocks on unwitting U.S. soldiers, and had developed a feel for it. And though we had received at least rudimentary training on field-expedient care for cavities, there was little call for it in Loc Ninh. Instead I did extractions. Lots and lots of extractions. It got to where Leo Violette took care of most of the rest of sick call while I worked on the ever-increasing number of dental patients that lined up at our door.

A mission for which we hadn't been trained, but wished we had, was food inspection. This was in the years before the massive buildup, you must remember, and rations for the teams were not a part of the resupply effort. There was a commissary in Saigon where we could purchase a certain amount of canned goods, powdered milk, powdered eggs and the like, but we could get there, at most, once a month. Anything fresh had to be bought off the economy. By default, we medics became the shoppers, inspectors, and purchasers of everything from fresh meat to vegetables to eggs. Funny how hard it is to locate the USDA seal of approval on a side of water buffalo hanging in a Vietnamese butcher shop.

I'd been raised on a farm, so at least had rudimentary knowledge of good meat and bad. Still, I'm sure that much of the meat we got was loaded with pathogens. We took care of this problem by cooking everything well done. Very well done. For the most part we avoided fresh vegetables, and those we did purchase we washed in a mixture of Clorox® and water. It must have worked, because the only cases of dysentery came from eating things we shouldn't.

We medics were also in charge of field sanitation and water purification. Field sanitation was one of the few subjects where our training at Fort Sam Houston had clear value. We were quite adept at building field latrines, installing piss-tubes, and spreading copious amounts of lime. Water purification was achieved by installing Lister bags throughout the camp, and treating the water with chlorine, either powdered chlorine supplied by the Army, or locally-purchased Clorox.

We had a copious supply of iodine tablets for field purification of canteen water, but getting the Cambodians to use it was a struggle. After all, they'd been drinking water directly from the streams for years, and argued that they'd suffered no ill effects. It did little good to point out to them that we had been treating them for worms of every description, liver flukes, amoebic and bacillary dysentery, and that most of these diseases had been picked up from those very same streams.

We weren't helped in our effort by some of our teammates, who also objected to the taste of the treated water. Our intelligence sergeant, SFC George Townsend, was the worst. Many times I saw him, while on patrol, immerse his canteen in the least dirty part of a stream and drink directly from it. To my protests he just laughed. Ain't hurt me yet, he would tell me.

When we finally returned to the States, I was told that George had to be treated for every parasite known to man. I tried to avoid saying, "I told you so."

Operating out of the new camp dispensary was a far better experience than in the cramped quarters of the outbuilding off the hangar, where we had done most of our work before. We had an eight-cot ward, a waiting room that was always full, a pharmacy, and a surgical/dental/outpatient treatment clinic all rolled into one. The building was constructed of a wooden frame, woven bamboo walls, and thatched palm leaf roof. It now escapes me why we didn't stack sandbags at least waist high around this and the other buildings, including sleeping quarters, team house, and indigenous barracks, but we didn't. A bullet fired from one end of the camp would scarcely be slowed by any structure on its way out the other side. I suspect the reason was the philosophy, frequently voiced by Captain Hackley and our team sergeant, Master Sergeant Jack Goodman, that aggressive patrolling would kept the V.C. well away from the camp.

Patrolling started almost immediately upon completion of the rudimentary tactical training given to our strike force. The idea was to keep one company constantly on patrol, one resting and refurbishing, and one preparing to replace the company in the field.

Quite naturally, one medic was expected to accompany each patrol, along with –generally – two other Americans. In practice this meant that Leo Violette or I would be going out every other week. It was a tough workload, but one I welcomed. I hadn't come to Vietnam to sit in camp for six months.

The mission of my first patrol was to move to the Cambodian border, search out caches, interdict lines of supply, and of course, engage any enemy troops found in the vicinity. A nine-mile hump, which, I thought, would be an easy trek. After all, I'd been used to the 101st, where patrols like this were a daily ration. My careful preparations included loading eight spare magazines of .45 ACP ammo for my beloved Tommy Gun, taping together two more to carry in the gun, packing seven days worth of rations (mostly C-rats, this being long before the days of lightweight patrol rations), loading up two one-quart and one two-quart collapsible canteens with water, packing as many comfort items as I thought I'd need in my mountain rucksack, filling any spare space with the contents of an M-5 aid kit, and of course, loading up on grenades, spare batteries for the radio, smoke grenades and flares for signaling and, oh yes, toothpaste, soap, bug juice, matches – the list could probably go on forever....

...As the patrol seemed to do, shortly after the trucks left us at the drop-off point. Within a mile I knew I'd made a serious miscalculation. Within two I'd probably dropped ten pounds of sweat, and had emptied all my canteens. By the time we finally stopped that evening I was rummaging through my possessions, deciding which would accompany me on the remainder of the patrol and which would stay there. The latter outnumbered the former. I calculated exactly how much food it would take to keep me alive for the next six days, factored in foraging, and gave away the majority of the heavy cans of C-rations. The soap, toothpaste, toothbrush, washcloth, jungle hammock, and every other comfort item save a newly issued poncho liner similarly went to grateful Cambodians.

By the end of the second day my beloved Tommy Gun was a particularly heavy albatross. Why couldn't we, I asked, get into a great battle! Not so much now because of any inherent bloodthirstiness (although Special Forces medics were often the most gung-ho members of the teams), but so I could get rid of some of this damned heavy ammunition.

The patrol turned up nothing but well-used trails, fields of punji stakes around what might once have been base areas but which were now empty, and miles and miles of jungle. Not a single round was fired, except by one of our Cambodians who dropped a rather large monkey out of a tree. We enjoyed the fresh meat.

I had, of course, been offering the Thompson in trade for one of the carbines to anyone who might have once before admired the weapon. I was met with universal disdain.

At the border we found our objective, an old French fort, abandoned for at least ten years, probably more. A sad place. Rusting barbed wire, concrete bunkers now home to rats and snakes, a minefield that we were careful to avoid, having been told that the French, and the Japanese who had been here before them, used mines containing picric acid, which grew ever more unstable with the years.

I thought of the young French soldiers who would have been peering out those embrasures, wondering day by day if this was the one in which the Viet Minh would come storming out of the jungle, knowing that survival would be iffy, at best. Of the rotting boredom, a worse enemy than the communists. Of the skimpy rations, the unstable resupply, the thought that the whole world had abandoned you to die here in the jungle.

And consoled myself that our camp would never resemble this forlorn place. That with the might of America behind us, we would inevitably prevail.

As I said before, I was very young.

When finally we got back to the camp I hung the Thompson up and presented myself to SFC Price, humbly asking for the issue of an M-2 carbine. His smug smile was far more humiliating than any amount of I told you so's. At that point, I didn't care.

With the relative assurance, gained through patrolling, that there weren't any large formations of Viet Cong within our immediate area, Violette and I began our village sick call program. Our intelligence sergeant had found that many of the local villagers were too intimidated to come to the dispensary. We'd solve that problem. We'd go to them. Two to three times a week one of us would pack a jeep full of medicine, take a small security force, and head for this or that outlying settlement. Within moments of arriving the lines formed, and even more than in the camp we met with diseases that tropical medicine specialists had seen only on film. Our Cambodian medics were trained to administer most of the injections, bandage wounds, perform some limited light surgery, and dispense the pills and potions, while my job was primarily in diagnosis and prescription. My well-thumbed copy of the Merck Manual got a severe workout, as did the accompanying Physician's Desk Reference. The Merck was the King James Version for every S.F. medic in those days; most of us more willing to give up our weapon than the beloved little tome.

Our intelligence sergeant, accompanied by his counterpart in the Vietnamese Special Forces team, would work the crowd while we were doing our magic. At first the villagers were scared or suspicious or both, but soon warmed to the approach. The information they gathered was passed on up the chain to be acted upon, we hope, by the Vietnamese Army. Much of it we checked out ourselves, and occasionally we managed to find this or that courier, paymaster, *agit-prop* squad, and either kill or capture them.

By the time we'd been in Loc Ninh four months, we were fairly certain we were hurting the communist efforts in that part of Binh Long Province. And we were. So of course, that couldn't last.

The first retaliation came when we sent out one of our Vietnamese-led normal local security patrols to ambush one of the trails leading into camp. They'd moved less than a kilometer when they were themselves ambushed. The sound of the firefight was clear and unmistakable. Our reaction force quickly saddled up, and reached the ambush site shortly after the attackers had fled.

Where before Violette and I had only treated the occasional gunshot or fragment wound, we were now faced with a mass casualty situation. Of the twelve man patrol, eight were seriously wounded, three more suffered non-life threatening wounds, and only one had escaped unscathed.

Our first task was triage. The medic's mantra, "Clear the airway and assure free breathing, stop the bleeding, protect the wound, treat for shock" ran over and over in my head. Not one of the casualties had an airway problem, for which we were immensely thankful. A number did have serious bleeding, only partly alleviated by the first aid measures taken by the reaction force medics. Only one casualty required a tourniquet, a young Cambodian who had his lower leg so mangled by a grenade that it was a certain candidate for amputation anyway. Direct pressure, elevation, and use of pressure points slowed the bleeding of the others enough that we could search for and tie off the bleeders with a little more care and leisure.

By far the worst casualty was another Cambodian who had taken what I judged, from the damage done, a .45 slug just behind the right eye socket, coming out in the middle of his forehead and ripping the skull away from entry to exit point. His eyeball hung down on his cheek, and the inside of his head was clearly visible in the sputtering light of the gas lanterns.

With only a nod of agreement, Violette and I had moved him to the side during the triage process. We'd save those whom we could.

It was only after we'd treated the rest of the casualties that I went back to check on this one, fully expecting him to be dead. He wasn't. He'd lain there quietly, offering only the occasional moan. But now he was going into convulsions. I was in completely uncharted territory here. I knew if the convulsions went unchecked he was going to die. Hell, he was flopping so badly I half expected his brain to fall out of the open hole in his skull.

I did a quick venous cut down, started a normal saline drip, and then injected a dose of sodium pentothal. The convulsions ceased almost immediately. I barely had time to congratulate myself when I noticed that his breathing was becoming very depressed, and that his pulse was slowing dangerously. Damn! Too much sodium pentothal, I surmised. I administered a shot of epinephrine to counter the effects of the sedative, only to have him start convulsing again. More sodium pentothal.

This seesaw process went on through the night. In the meantime Violette finished the work on the other casualties, all of whom would make it. There would be no evacuation, of course. Our only means of evacua-

tion was an Air America C-47, and it wasn't going to chance the largely unsecured runway before daylight at the earliest.

Somehow, and to this day it amazes me that it worked, I kept the man with the head wound alive until we could get him on the plane at midmorning. I was even more amazed when, on my second tour, I met someone who had been in Loc Ninh when this particular soldier returned to duty. He had a large plate in his head, a skin graft covering it, and of course only had one functional eye. But he was alive, and seemingly not the much worse for wear. I wish I could attribute it to the brilliance of my treatment regimen, but in reality have to ascribe it to the remarkable resiliency of the human organism, something with which I'd become even better acquainted.

The next night the camp was subjected to a probe, with automatic weapons fire ripping through the thin bamboo that was our only shelter. I grabbed the Browning Automatic Rifle that I'd picked as my choice of weapon for camp defense and scurried to my bunker, happily returning fire at the muzzle flashes. The weapons sergeants were pumping out mortars, the Cambodian strikers poured withering fire into the surrounding trees, and the machine gun mounted on the watch tower sprayed streams of tracer. It was my first full-fledged firefight, and I was a lot more excited than scared. Within just a few minutes it was over, the attackers fading away into the countryside. Damage assessment by our patrols the next morning found a lot of shot-up rubber trees (which the U.S. Government would later have to pay for), one blood trail, and not much else.

The damage to the camp was not much more impressive, except for my beloved dispensary. Bullets had ripped through the place, exploding bottles of pills and potions, riddling our narcotics cabinet, and smashing the kerosene-powered refrigerator in which we kept our perishable drugs. It was a huge mess.

The next few days were spent cleaning up and supervising the filling and placement of sandbags. It's not that we didn't learn from our mistakes. It's just that it took mistakes for us to learn.

Then things went quiet again. We attributed it to ever-more aggressive patrolling. In reality the enemy was just waiting for a more lucrative target.

It came when we resumed our village sick call program.

Our six-month tour was drawing to a close. The replacement team, headed by Captain Robert K. Mosier, arrived from Fort Bragg for a two-week transition.

Mosier wanted to observe the village sick call program. Largely on the spur of the moment, he, Captain Hackley, and our team sergeant, MSG Jack Goodman, hopped into a jeep and headed out for the village where Leo Violette was conducting that day's effort. The LLDB escorts took their own jeep, and since they knew the area, were in the lead.

The little convoy passed through a small village on the way to the larger village where the sick call was being held. The Viet Cong ambush team in the buildings lining the road must have been amazed at this stroke of luck – they had been expecting to ambush Leo and his medical team on their return from sick call, but now had in their sights a much more lucrative target.

The first round came through the rear window of the jeep in which the Americans were riding, striking Sergeant Goodman in the back of the head. His death was instantaneous. Captain Hackley, driving, was hit three times in the chest and tumbled out of the jeep on his side, mortally wounded. Captain Mosier, in the right front, was hit several times in the hip and leg and tumbled out the jeep, dragging himself to refuge in a ditch where, our later investigation determined, he managed to return fire before being killed by a grenade.

A grenade thrown into their vehicle had already wiped out the Vietnamese team. The VC quickly stripped the bodies of weapons and equipment, and faded into the surrounding trees. The ambush had happened so close to camp the defenders could clearly hear the gunfire and explosions, and a reaction force was on site within minutes. They were, of course, far too late.

Goodman, Hackley and Mosier were, respectively, the 87th through 89th Americans killed in Vietnam, and the 45th through 47th men killed in action. Sergeant Goodman was memorialized by having the camp through which all Special Forces troops in-processed and out-processed named for him. A disproportionate number of them would join the casualty rolls too.

And so ended my first tour, and my last one as a medic. There were to be two more tours, one as the Executive Officer of an "A" camp in II Corps and later as a Studies and Observations Group (SOG) operative and, when I extended this tour, as a Provincial Reconnaissance Unit Advisor in the much-maligned but very effective Phoenix Program.

Other friends and colleagues would die, far too many of them.

Why did I go back? I'd had to extend my enlistment to go to Vietnam in the first place. I was coming up on discharge time. Obviously, had I wanted to this to be my last tour, it could have been.

But, as some wit, name lost to history, said, "It was a shitty war, but it was the only war we had."

Major (Retired) John F. Mullins began his special operations career as a Special Forces medic serving in Vietnam in 1966. He later attended Officer Candidate School and was commissioned as a Second Lieutenant in the infantry. After completing Ranger school, Mullins was assigned to the 3rd Special Forces Group and returned for a second tour in Vietnam as executive officer on an "A" team deployed in the Central Highlands. During this tour, Lieutenant Mullins received the Silver Star, Bronze Star, and Purple Heart. He returned to the United States for eighteen months and was, once again, sent to Vietnam. During Mullins' third tour in Vietnam he was assigned to the Studies and Observation Group and later as a Provincial Reconnaissance Unit advisor for Thua Thien and Quang Tri Provinces. During the seventies, the author served the Special Forces in Europe, the United States, and Central America. Upon retiring from the military, Major Mullins continued to work in special operations related missions for a variety of government agencies. He holds a Master of Business Administration degree from Midwestern State University, Wichita Falls, Texas. He is a published author, with one novel (*Days of Fire*, Berkley, 1991), one nonfiction work (*Frangible Ammunition,* Paladin Press, 2001), numerous articles, and one produced teleplay to his credit. He is also president & CEO of Longbow, Inc., a company engaged in the manufacture of non-toxic frangible ammunition - a product based upon a patent of mine.

John Mullins withtrusty (soon to be discarded) Thompson submachine gun.

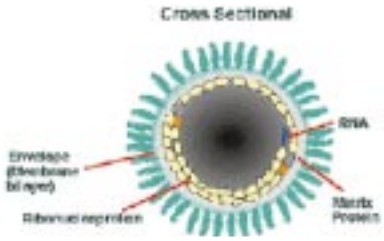
Rabies

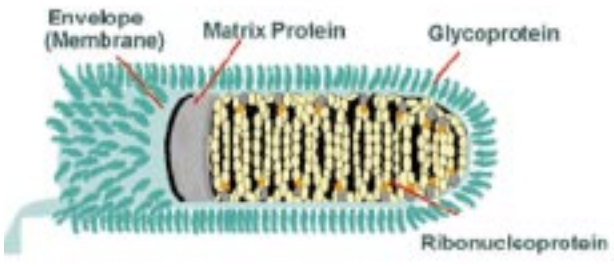
Robert C. Allen, DO

Abstract

Rabies is a great concern for special operations. With its unique transmission, worldwide distribution, and uniformly fatal outcome if untreated, rabies holds an important place in SOF medical planning and practice. Myths about rabies and rabies treatment abound. Research defines the epidemiology and treatment of rabies, providing weapons in the fight against it. Survival of rabies exposure depends to a large extent upon quick access to proper therapy, so SOF medical personnel must be fully aware of the windows, options, and preventions.

Rabies is one of the oldest diseases recognized by man. It was accurately described as long ago as 2,000 BCE. Aristotle recognized that rabies was transmitted by the bite of a dog in 322 BCE. Celsius, circa 100 AD, recommended cautery of wounds to prevent rabies. Galen in 200 AD recommended surgical excision of bite wounds to prevent rabies. Rabies transmission by injection of saliva from an infected dog was demonstrated in 1804. Louis Pasteur introduced the modern era of rabies treatment in 1885, with the first successful treatment of a rabid dog bite using an attenuated vaccine prepared from rabbit spinal cord.



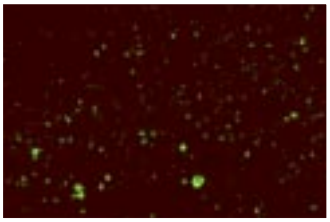


NATURAL HISTORY

Rabies is an encephalitis, caused by an RNA virus of the family Rhabdoviridae, genus Lyssavirus. It is a bullet-shaped virus with 5 protein components. The component that induces the protective antibody is a glycoprotein with a molecular weight of 60,000 daltons, which stimulates immunity to the disease.

Rabies virus has distinct serotypes, many of which appear to be species-specific. The virulence of a particular strain may be decreased when infecting an "alien" species. This cross-species attenuation usually manifests as a prolonged incubation time, rather than subclinical infection.

Rabies serotypes are frequently used in epidemiologic studies of the disease. There are five dis-



Positive direct florescent antibody test

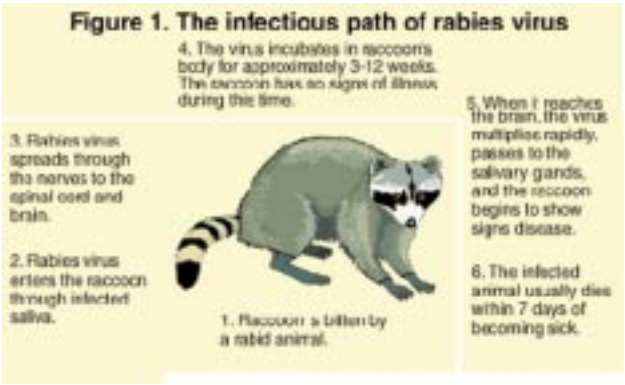
Photos Courtesy of CDC

tinct rabies serotypes found in mammals native to North America.

Rabies is found only in mammals. Any mammal can be infected with the virus, although opossums are very resistant to experimental infection. Apparently, there is no reservoir host for rabies. Rabies antibodies have been found in some seemingly healthy (recovered?) wild animals, implying that some individuals can survive clinical rabies. Researchers suspect that this recovery is due to an infection with a strain of rabies that is normally alien to that particular species.

Species differ in their resistance to the disease. Some species of bats can harbor and transmit rabies for months before finally dying. While virtually any

Figure 1. The infectious path of rabies virus



mammal can be infected with the disease, not all can transmit it. Transmission of rabies in the wild requires that the virus be secreted in the saliva of the infected animal. Rodents and lagomorphs (rabbits) can be infected with rabies; however, they almost invariably die before the virus makes an appearance in the saliva. Large rodents, such as woodchucks and beavers, may be an exception to this rule. Rabid woodchucks, secreting virus in their saliva, have been captured in the northeastern United States.

The vast majority of rabies cases in humans are a result of animal bites, most often from dogs. There have been a few cases of rabies transmission through means other than animal bites. In one case, several spelunkers died of rabies after presumably inhaling the virus inside a large bat cave. In another bizarre case, rabies was transmitted through a corneal transplant - the donor had died of an unrecognized case of rabies. Several cases are reported of human rabies resulting from handling of bats, even with no apparent bite wounds.

Despite the existence of a safe and effective post-exposure treatment, human cases of rabies still occur. Upwards of 15,000 people die from rabies in India each year. In 1985, 76 cases of human rabies were reported in Mexico. In the United States, on average two or three cases of human rabies are reported each year. However, this can vary significantly -- between September and November of 2000, 6 unrelated cases of human rabies were reported in the United States and Canada.

Rabies is a fatal disease. There is no cure once the disease has reached the central nervous system. There have been sporadic reports of people "surviving" rabies with massive life support. Three cases of humans surviving rabies have been documented in the literature. In all three cases, the patients had some immunity to the disease, either active or passive. Two were given (obviously inadequate) rabies post-exposure prophylaxis. Another patient, a microbiologist working with rabies virus, had received pre-exposure rabies vaccinations.

Aggressive vaccination and quarantine laws have resulted in the eradication of rabies from some parts of the world. The United Kingdom, Iceland, Australia and Japan are considered rabies-free, as are many other island nations. Most of Europe is considered endemic for rabies, as are North and South America, Africa and the Middle East.

The major vectors of rabies are wild and domestic carnivores, including cats, dogs, foxes, weasels, mongooses, skunks, raccoons and bats. Interestingly, however, cattle (herbivores) are the most frequently reported rabid domestic animals in the United States and Canada. The incidence of rabid animals varies widely in the United States. Cats used to be considered low risk for rabies transmission - however, data indicate that the incidence of rabies among domestic cats is increasing.

As a rule, any mammalian bite not due to a rodent, a lagomorph or human is potentially rabid. Rabies is most often transmitted by the bite of an infected animal. The virus is secreted in the saliva, and contaminates the wound during the bite. The virus travels via the neuromuscular spindles to the peripheral nervous system, then via the axons of the peripheral nervous system to the central nervous system.

A pit bull attacked a 10 year old male who turned and attempted to run from the dog. Note the multiple lacerations and puncture wounds to the posterior thigh of the left leg. Victim was wearing a pair of jeans, which provided no protection at all.

8 year old girl bitten on the face by her pet poodle. She startled the animal out of a nap and it snapped at her face. Unfortunately the snap connected. This is why one of the slides in my animal bite lecture is: "Don't Kiss Your Doggie".

The closer the bite is to the central nervous system, the shorter the incubation period. Incubation of rabies can be as short as 4 days (direct eye inoculation), or over a year for some peripheral bites. The average incubation period for human cases of rabies is 20 to 60 days.

3 year old child bitten on the neck by another pit bull. The animal charged out of its yard, jumped a fence and attacked the child. Several bites to the neck area resulted. The largest one was into the deep spaces of the neck, requiring surgical neck exploration. The dog was shot by the child's uncle and dumped into the San Antonio river, so the child was given rabies prophylaxis since the animal wasn't available for observation

It is best to give prophylactic treatment for rabies as soon as possible after a bite. However, a bite to the face has greater urgency than a bite to the arms or legs. Bites to the face should begin treatment within twenty-four hours of the injury, if not immediately.

Several cases of human rabies have occurred in the United States with no apparent history of an animal bite. In two of these cases, the victims had handled, but apparently were not bitten by, bats. In both cases, the rabies serotype was bat-related. Therefore, the CDC now recommends that post-exposure rabies prophylaxis be given if there is even a *possibility* of a bat bite, (*i.e.* a bat found in a child's room, or a person handling a sick bat).

CLINICAL FEATURES

The initial symptoms of rabies are nonspecific. Fatigue, malaise, anxiety, agitation, nausea, vomiting and anorexia are non-specific signs. In about 50% of cases, patients will have noted pain or paresthesias at the bite site.

Following the prodromal phase, the disease begins to affect the limbic system, with relative sparing of the neocortex. Rabies can then manifest either the *furious* or the *dumb* form.

Dumb rabies displays progressive lethargy, ascending paralysis, cranial nerve palsies, changes in phonation, and incoordination. The symptoms progress to coma, and eventually death. Most animals with the dumb rabies do not transmit it. Dumb rabies is the least common form of the disease.

Furious rabies, the most common manifestation of the disease, is characterized by episodes of aggressive behavior, seizures and paroxysms of violent activity, with intervening periods of essentially normal behavior. Hallucinations are common. Severe pharyngeal spasm may occur when the subject attempts to drink, with the subject later becoming agitated at the sight of water. The rabid subject will *attempt* to drink but will not be able to due to the pharyngeal spasm. This pharyngeal spasm gives rise to the term *hydrophobia*, a popular synonym for rabies.

Pharyngeal spasm and choking also may occur when air is blown into the patients face, called *aerophobia*. Animals with furious rabies can show all these signs; however, dogs do not usually develop pharyngeal spasm.

Behavioral changes are the most important early sign of rabies. A wild animal that shows no fear of humans, or becomes friendly, or a domestic animal that becomes suddenly vicious must be suspected of having rabies, and should be kept in quarantine. Excessive salivation (foaming at the mouth) is a late sign in rabies. Death is usually the result of seizures, paralysis, coma or secondary complications.

TREATMENT

Rabies prevention begins with rapid cleaning of the bite wound. The initial cleaning should be done with whatever liquid is available. Tap water will do in a pinch. More importantly, mechanical cleaning, by scrubbing the wound with gauze sponges or cotton applicators must be done as soon as possible. The only antiseptic solution that has been *proven* effective against the rabies virus is benzalkonium chloride (Zephiran®). Some authorities state that all animal wounds should be cleaned with a Zephiran® solution, then irrigated with normal saline. Benzalkonium chloride solution is tissue-toxic, and should not be allowed to have extended contact with the wound. Povidone iodine (Betadine®) solution is a highly effective viricide, and is not as tissue toxic as benzalkonium. However, povidone iodine has never been proven effective against the rabies virus.

Another method of limiting the uptake of the rabies virus is to anesthetize the wound with local anesthetic. Procaine has been shown to inhibit uptake of the rabies virus. Bupivacaine (Marcaine®) and lidocaine probably have the same effect, but have not been studied with live virus.

Rabies immunoprophylaxis has come a long way since 1885. Until the early 1980s the only rabies vaccine licensed for use in the United States was *duck embryo vaccine* (DEV). This vaccine was better than nothing, but was highly allergenic, poorly immunogenic, and required a minimum of 23 injections to develop a protective antibody titer. *Human diploid cell vaccine* (HDCV) was introduced in the early 1980's . *Rabies vaccine adsorbed* (RVA) is a similar product introduced in the late 1980s. The latest rabies vaccine approved for use in the United States is purified chick embryo culture vaccine (PCEC), which was approved by the FDA in October of 1997. All three of these later vaccines are highly immunogenic with a low incidence of side effects. All three vaccines also have the same post-exposure dose regimen.

The current post-exposure prophylaxis dose of rabies vaccine is 1.0 ml given intramuscularly (IM) on 5 separate occasions, on Days 0, 3, 7, 14 and 28 post-bite. These are highly immunogenic vaccines, with essentially no treatment failures *if* they are given properly. Several caveats must be observed:

1. HRIG (see below) *must be* used in conjunction with post-exposure immunization.

2. The vaccine must be given IM. Injections are given into the deltoid muscle in adults, and the lateral thigh in children. Gluteal injection is not effective.

3. Chloroquine interferes with antibody induction. Patients on chloroquine antimalarial prophylaxis should stop this medication during the rabies treatment.

4. Immunosuppressed patients should have antibody levels checked after completion of the series.

5. If a person who has had rabies prophylaxis in the past is bitten, a two booster series of 1.0 ml of vaccine is given on Days 0 and 3, with no further treatment needed. HRIG (see below) is *not* needed in this case.

Rabies vaccination provides active immunization against the rabies virus. However, due to the length of time it takes for protective antibody to appear, passive immunity must also be given. Post-exposure prophylaxis involves use of vaccine and *human rabies immune globulin* (HRIG). HRIG supplies protective antibody until the vaccine induces sufficient endogenous (host) antibody production. HRIG is given in a dose of 20 IU/Kg on day 0 of treatment. HRIG must be given at the same time as vaccine. There is no rationale for using one without the other, unless the patient has already had rabies immunization in the past.

The administration regimen of HRIG used to be one-half of the dose infiltrated around the wound site, the other half given IM. The current recommendation is that as much as possible of the full dose should be infiltrated around the wound site, with the rest given

IM. In the case of a finger or toe bite, as much of the *wound dose* is given into the digit as possible; the remainder is given proximal to the bite.

HRIG should not be mixed in the same syringe with rabies vaccine. The IM HRIG dose also should be given in an anatomic area remote from the IM dose of rabies vaccine.

Allergic reactions to rabies vaccine and HRIG are known, but relatively rare. Approximately twenty-five percent of patients have minor local reactions such as pain or swelling to the injection site. One in five patients will develop minor arthralgias, headache, nausea or pruritis. True allergic reactions have an incidence of eleven per 10,000, and can range from hives to anaphylaxis. No fatalities have been reported. Two cases of Guillian-Barre (ascending paralysis) syndrome have occurred following rabies prophylaxis, and both fully recovered. HDCV and HRIG have been used safely in all stages of pregnancy.

All three rabies vaccines can be used for pre-exposure immunization against rabies. One ml is given IM on Days 0, 7 and 21 or 28. An alternate treatment gives 0.1 ml intradermally following the same schedule. If a patient who has had adequate pre-exposure immunization, or has been through a full HDCV, RVA or PCEC rabies treatment course is bitten by a rabid animal, the treatment regimen noted above is modified: 1.0 ml of vaccine is given IM on Day 0 and 3. Intradermal administration is not appropriate for *post* exposure prophylaxis. HRIG is not needed, and should not be given. Several SOF units (for example, Army Special Forces and Air Force Special Tactics operators) are given pre-exposure rabies vaccine as part of their routine vaccination series.

One-year booster doses of HDCV can lead to headache, arthralgias, malaise, fever and myalgias in approximately twenty-five percent of persons getting this dose. Booster doses of HDCV can also lead to an immune complex-like disease, characterized by urticaria, angioedema, rash or arthralgia in approximately ten percent of persons receiving pre-exposure prophylaxis. For personnel who do not routinely have exposure to rabid animals, booster doses after the primary series are not recommended. Those who have high risk of exposure should have rabies titers checked every two years, and a booster given if the titer drops below 1:5 dilution. Personnel who work in laboratories where rabies virus or rabid animal tissue are handled should have titers checked every 6 months.

With the advent of modern rabies vaccine and HRIG, the decision whether to treat for rabies after an animal bite has been greatly simplified. *When in doubt, treat*. Tables 1 and 2 summarize treatment recommendations. Vaccine and HRIG are not cheap medications, and should not be given indiscriminately. However, given that rabies is a certainly-fatal disease, and given the availability of a safe and effective vaccine, it is best to err on the side of treatment.

If an animal must be sacrificed in order to examine it for rabies, remember that the head must be preserved. In other words, *don't let "Bubba" shoot the raccoon in the head*! It is best to let the official animal control or veterinary personnel take care of sacrificing and shipping an animal for rabies testing.

Rabies is a justly-feared disease. The possibility of rabies in any mammalian bite must always be considered. However, with careful wound treatment and adequate post-exposure prophylaxis, the risk of developing rabies from a mammalian bite can be reduced to essentially none.

Editors note: Pregnancy is not a contraindication to postexposure rabies prophylaxis. According to CDC, only HDCV is approved for intradermal use.

WA

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Table 1:
Summary of Rabies Prophylaxis Recommendations

Species	Condition of animal at time of attack	Treatment of exposed person
Dog or Cat	Healthy, available for 10 days of observation	None, unless animal develops rabies
	Rabid, or suspected rabid	HRIG and vaccine
	Unknown (escaped)	Consult with public health. HRIG and vaccine likely indicated.
Skunk, bat, fox, raccoon, bobcat, other carnivores.	Consider rabid until/unless proven otherwise by laboratory analysis of the animal's brain	HRIG and vaccine
Livestock	Consult with local public health and veterinary authorities.	
Rodents and lagomorphs	Small rodents almost never call for rabies prophylaxis. In cases of large wild rodents such as beaver or woodchuck, consult local public health.	

Table 2:
Rabies Post-exposure Immunization Guidelines

A) Persons not previously immunized, did not receive HDCV, PCEC or RVA at prior immunizations, or did not complete full rabies series in past:

- HRIG: 20 IU/Kg body weight, as much as possible infiltrated around wound site, remainder given IM.
- HDCV, RVA or PCEC: 5 doses, each 1.0 cc given IM, preferably in deltoid area. DO NOT give into gluteal area. *Do not mix with HRIG*, or give in the same site. Doses are given on Days 0, 3, 7, 14 and 28.

B) Persons previously immunized with HDCV, PCEC or RVA, or persons given appropriate pre-exposure prophylaxis with HDCV, PCEC or RVA:

- HRIG: Not required - do not give.
- HDCV, RVA or PCEC: 2 doses, each 1.0 ml IM preferably in deltoid area. *Do not give into gluteal area*. Doses are given on Days 0 and 3.

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Lt Col, USAF MC CFS

Dr. Rob Allen is currently assigned as the Group Surgeon, 720th Special Tactics Group (AFSOC), at Hurlburt Field, FL. He is the head physician for USAF Combat Control, Combat Weather, and Special Operations Pararescue personnel. He has been assigned to Special Tactics for 7 years, first as the Squadron Surgeon, 24th Special Tactics Squadron, and then to Pope AFB NC.

Dr. Allen is originally from Claremont, California, and did his undergraduate work at the University of California, Irvine, where he completed degrees in biological sciences and chemistry. He attended medical school at the College of Osteopathic Medicine of the Pacific, Receiving his DO degree in 1983. After completing his Internship in Pontiac, MI, he came on active duty with the Air Force in 1984.

Dr. Allen did his residency in Emergency Medicine at Wilford Hall USAF Medical Center/Brook Army Medical Center, is Board-Certified in Emergency Medicine, and is a Fellow of the American College of Emergency Physicians. Dr Allen has extensive experience in clinical toxicology, operational medicine and wilderness medicine. He is on the Board of Directors of the Wilderness Medical Society.

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The JSOM staff, in an effort to build on Dr. Allen's article, found this information published by the CDC MMWR Weekly. The following is not on the CME test but is *important to know information*.

December 15, 2000 / 49(49); 1111-5

Human Rabies — California, Georgia, Minnesota, New York, and Wisconsin, 2000

On September 20, October 9, 10, 25, and November 1, 2000, persons who resided in California, New York, Georgia, Minnesota, and Wisconsin, respectively, died of rabies. This report summarizes the case investigations.

California

On September 15, a 49-year-old man visited a neurologist with 2 days of increasing right arm pain and paresthesias. The neurologist diagnosed atypical neuropathy (Table 1). The symptoms increased and were accompanied by hand spasms and sweating on the right side of the face and trunk. The patient was discharged twice from an emergency department but symptoms worsened. After developing dysphagia, hypersalivation, agitation, and generalized muscle twitching, the patient was admitted to a local hospital on September 16. Vital signs and blood tests were normal, but within hours he became confused. The consulting neurologist suspected rabies. *Rabies immune globulin, vaccine, and acyclovir* were administered. On September 17, the patient was placed on mechanical ventilation and rabies tests returned positive. Renal failure developed and the patient died on September 20. The patient did not report contact with a bat, although his wife reported that in June or July a bat had flown into their house and the patient had removed it.

New York

On September 22, a 54-year-old man who had resided in Ghana arrived in the United States, and on September 26, reported discomfort in his right lower back. During the next few days, the pain intensified and alternated with abdominal discomfort. He developed restlessness and anxiety. On September 30, he was admitted to a local hospital for suspected bowel obstruction. On examination, the patient appeared anxious and had right flank tenderness, diaphoresis, spontaneous ejaculation, soft tissue swelling of the right lumbar area, vomiting, and a temperature of 99.3 F (37.4 C). Other symptoms appeared within hours, including dysphagia, dizziness, shortness of breath, and paranoia. The patient became delirious, with frothing and agitation. On October 1, the patient had a cardiac arrest, was resuscitated, and placed on mechanical ventilation. Rabies tests were positive on October 3. After a gradual decrease in respiration, heart rate, and blood pressure, the patient died on October 9. History from the patient's employer in Ghana revealed that the patient had been bitten in Ghana on his thumb and leg by his unvaccinated puppy in May.

Georgia

On October 3, a 26-year-old man developed intractable vomiting and hematemesis. At a local hospital, he was treated with antiemetic suppositories; that evening he became disoriented, combative, and had difficulty breathing. On October 5, he became hypotensive and hypoxic and was transferred to a referral hospital for ventilatory support. Examination revealed a temperature of 104 F (40 C), anisocoria, copious oral secretions, scattered bilateral pulmonary crackles, and a white blood cell count (WBC) of 46.6 cells x 109/L (normal: 5—10 x 109/L); a chest radiograph revealed bilateral diffuse alveolar densities. Broad-spectrum antibiotics, including acyclovir, were initiated. On October 9, the patient developed cardiac arrhythmia, hypotension, and became combative, necessitating sedative and paralytic agent therapies. He developed respiratory and renal failure and died on October 10. Since July, the patient had been renting a room on the upper floor of an old house. He had reported to co-workers that bats from the attic had entered his living quarters and landed on him while he slept. Investigation of the house occupied by the patient since July revealed a colony of approximately 200 Mexican free-tailed bats in the attic and openings between the attic and the patient's bedroom, bathroom, closet, and kitchen.

Minnesota

On October 14, a 47-year-old man visited a local clinic with 6 days of worsening right arm pain and parasthesias. Two days later he developed decreased right finger movement. Nerve conduction studies were consistent with carpal tunnel syndrome. On October 19, while travelling in North Dakota, the patient was admitted to a North Dakota hospital with a temperature of 103 F (39.4 C), flaccid paralysis and sensory loss in the right upper extremity, sensory loss in the mid-thoracic area, hypoesthesia and hyporeflexia in the left upper extremity, and anisocoria. Laboratory findings were normal except a WBC count of 13.8 x 109/L. The patient was placed on broad-spectrum antibiotics. On October 20, the patient developed acute respiratory failure and was intubated. Magnetic resonance imaging was consistent

with myelitis and ganciclovir was added to antibiotic coverage. He died on October 25. Three days earlier, a friend told the family that during August 11—19, the patient had been awakened by a bat on his right hand. He killed the bat and was bitten in the process. The patient did not seek medical care. Investigation found in the patient's house multiple portals of entry for bats, openings between the attic and living areas, and extensive deposits of guano in the attic and living area.

Wisconsin

On October 14, a 69-year-old man with a 2-day history of chest discomfort and numbness, tingling, and tremors of the left arm was admitted to a local hospital for cardiac evaluation. On October 16, the patient had onset of progressive dysphagia, diaphoresis, delirium, and myoclonus. The patient was treated with intravenous antibiotics for possible sepsis and acyclovir for suspected herpes encephalitis. He developed renal insufficiency requiring hemodialysis and respiratory failure necessitating mechanical ventilation. A *serum rapid fluorescent focus inhibition test* for rabies antibodies was negative on October 18. The patient died on November 1, and postmortem examination of the brain revealed Negri bodies. Subsequent testing confirmed a diagnosis of rabies. The patient had told a friend that two or three times a year he had removed bats from his house with his bare hands; several other residences used by the patient also had potential portals for the entry of bats. He did not mention being bitten by an animal but had asked a friend a week before admission if rabies could be acquired from an insect bite.

Editorial Note:

These five cases of human rabies are the first diagnosed in the United States since December 1998, and underscore that rabies should be considered in any patient with progressive encephalitis. The initial presentations of rabies can be diverse and a history of animal contact is rarely obtained. Because the immune response to rabies may not occur until late in the disease, if rabies is suspected, an antemortem examination should include a nuchal skin biopsy, saliva, and cerebral spinal fluid or a postmortem examination of central nervous system tissue (1).

In the United States since 1990, infection with indigenous rabies virus variants associated with insectivorous bats and infection with foreign canine rabies virus variants have accounted for 30 of the 32 human cases. Although 24 (74%) of the 32 cases since 1990 have been attributed to bat-associated variants of the virus, a history of a bite was established in only two cases. Contact with bats occurred in approximately half of the other cases. These cases represent various bat-contact histories: a bat bite, direct contact with bats with multiple opportunities to be bitten, and possible direct contact with a bat. Canine rabies is prevalent in Africa, Asia, and Latin America. Worldwide estimates of human rabies deaths exceed 50,000 cases each year, and >95% of reported cases occur in regions where canine rabies is endemic (2).

Although rabies usually is transmitted by a bite, persons may minimize the medical implications of a bat bite. Unlike bites from larger animals, the trauma of a bat bite is unlikely to warrant seeking medical care. Unless the potential for rabies exposure is known to the patient, rabies postexposure prophylaxis (PEP) will not be received. Although bat rabies virus variants can be transmitted secondarily from terrestrial mammals, the lack of other animal-bite histories and the rarity of bat rabies virus variants found in terrestrial mammals suggest that this means of transmission is rare (3).

Persons who are bitten or scratched by any animal should wash wounds thoroughly and seek immediate medical attention to evaluate the need for PEP. In all cases where bat-human contact has occurred or is suspected, the bat should be collected and tested for rabies. If the bat is unavailable, the need for PEP should be assessed by public health officials. PEP should be considered after direct contact between a human and a bat, unless the exposed person can be certain a bite, scratch, or mucous membrane exposure did not occur. PEP may be considered for persons who were in the same room as a bat and who might be unaware that a bite or direct contact had occurred (e.g., when a sleeping person wakes to find a bat in the room or an adult witnesses a bat in the room with an unattended child, mentally disabled person, or intoxicated person). PEP is not warranted when direct contact between a human and a bat did not occur. Seeing a bat or being in the vicinity of bats does not constitute an exposure (4).

References

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3.Baer GM, Smith JS. Rabies in non-hematophagous bats. In: Baer GM, ed. The natural history of rabies. 2nd ed. Boca Raton, Florida: CRC Press, 1991:341—66.

4.CDC. Human rabies prevention—United States, 1999: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48(no. RR-1).

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FROM THE CONTINUING EDUCATION STAFF

THE STAFF OF THE *Journal of Special Operations Medicine* CONTINUING EDUCATION DEPARTMENT WELCOMES YOU TO EARN UP TO THREE (3) CONTINUING EDUCATION HOURS IN THIS EDITION. READ THE ARTICLES ON HIV AND RABIES AND TAKE THE FOLLOWING TESTS. SUBMIT THEM VIA EMAIL TO JSOMS@SOCOM.MIL IN THE SUBJECT AREA TYPE "TEST SUBMISSION" AND THE NAME OF THE ARTICLE. INCLUDE YOUR LICENSE OR CERTIFICATION NUMBER. DIRECT ANY QUESTIONS TO OUR POC FOR *SOM* CONTINUING EDUCATION: MSGT BOB MCCUMSEY AT DSN 299-5043 OR EMAIL MCCUMSR@SOCOM.MIL.

CONTINUING MEDICAL EDUCATION TEST
NO. 1
HIV Post-Exposure Prophylaxis

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1. The CDC guidelines for HIV postexposure prophylaxis contain ____ different recommendations for treatment based on the type of exposure.
   A. 2
   B. 3
   C. 4
   D. 5

2. The basic regimen for HIV postexposure prophylaxis includes:
   A. Washing the exposed area only
   B. Combination of two nucleoside reverse transcriptase inhibitors
   C. Combination of two nucleoside reverse transcriptase inhibitors and a protease inhibitor
   D. Combination of two protease inhibitors and a nucleoside reverse transcriptase inhibitor

3. The expanded regimen for HIV postexposure prophylaxis includes:
   A. Washing the exposed area only
   B. Combination of two nucleoside reverse transcriptase inhibitors
   C. Combination of two nucleoside reverse transcriptase inhibitors and a protease inhibitor
   D. Combination of two protease inhibitors and a nucleoside reverse transcriptase inhibitor

4. According to the UN/AIDS report, some sub-groups of the population in sub-saharan Africa have ____% HIV infection rates.
   A. 68
   B. 30
   C. 20
   D. 50

5. Which of the following is **not** considered a significant risk for exposure to HIV:
   A. Blood or body fluids on intact skin for short period of time
   B. Blood or body fluids on non-intact skin
   C. Blood or body fluids on mucus membranes
   D. Percutaneous exposure with a solid or hollow needle with visible source patient blood

6. According to the Armed Forces Medical Intelligence Center, all blood supplies in sub-saharan Africa are considered safe.
   A. True
   B. False

7. The best immediate treatment for a potential exposure is:
   A. Immediately start the basic regimen
   B. Immediately start the expanded regimen

C. Wait to consult with a physician to determine treatment
D. Wash affected area vigorously with soap and water

8. The medications used for HIV postexposure prophylaxis have significant _____ side effects that may require treatment with loperamide.
   A. Neurologic
   B. Musculoskeletal
   C. Gasterointestinal
   D. Cardiac

9. HIV postexposure prophylaxis is best started within ___ hour(s) of exposure
   A. 1
   B. 2
   C. 6
   D. 8

10. The best defense against potential HIV exposure is:
   A. Limit deployments to areas with high HIV rates
   B. Universal precautions
   C. Pre-exposure prophylaxis
   D. Thorough hand washing

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HIV- POST-EXPOSURE PROPHYLAXIS

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CONTINUING MEDICAL EDUCATION TEST
NO. 2
Rabies

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1. Rabies is
    A. A disease found only in mammals
    B. A viral encephalitis caused by an RNA virus
    C. Virtually always fatal in humans once the virus has reached the central nervous system
    D. All of the above.

2. A physician assigned to a SEAL team is struck in the face by a flying bat during a night exercise in CONUS. Upon examination, a small laceration of the lip is found. Which of the following is the BEST treatment option?
    A. Wash out and scrub the laceration with water or saline ASAP
    B. Wash out the laceration with rubbing alcohol
    C. Excise the laceration and suture the wound closed
    D. Evacuate to definitive care and begin rabies post-exposure treatment
    E. A and D
    F. B, C and D

3. A dead bat is found in the bedroom of an 18-month old child one morning. The mother of the child picked up the bat and flushed it down the toilet. She then calls asking what she should do next. What rabies treatment, if any, should be given?
    A. Mom gets full rabies treatment, child gets no treatment.
    B. Child gets full rabies treatment, Mom gets HRIG only
    C. Mom and child both get full rabies treatment
    D. Neither Mom or child need any rabies treatment

4. Rabies is NOT found in which of the following countries?
    A. United States
    B. Iceland
    C. Australia
    D. Zaire
    E. B and C
    F. A and D

5. Major vectors of rabies in the wild include:
    A. Skunks
    B. Raccoons
    C. Foxes
    D. Bats
    E. All of the above

6. Rabid animals always exhibit violent, aggressive behavior, alternating with periods of normal behavior.

A. True
B. False

7. Rabies vaccine for post-exposure prophylaxis is given by the following schedule
   A. 18 shots given IM into the abdominal musculature over 24 days.
   B. 5 shots given IM into the lateral thigh or deltoid muscle over 28 days.
   C. 5 shots given IM into the gluteal, lateral thigh or deltoid musculature over 28 days
   D. B or C

8. Human rabies immune globulin (HRIG) can be used as the sole means of rabies treatment if the victim has had a minor (i.e. non-bite) exposure to a rabid animal.
   A. True
   B. False

9. If a patient has had rabies vaccination in the past (either pre-exposure prophylaxis or full rabies treatment) with modern rabies vaccine (either HDCV, PCEC or RVA) and has a rabies bite exposure, what is the appropriate rabies treatment?
   A. No treatment necessary.
   B. Full rabies post-exposure treatment
   C. Two booster shots of vaccine three days apart
   D. 5 booster doses of rabies vaccine over 28 days

10. A 12 year old child living in south Texas is bitten by his pet dog ("adopted" a year ago while on a trip to Mexico). The dog is healthy, acting normally and is confined to the house. After initial wound care, what treatment is needed?
   A. Start rabies post-exposure treatment immediately
   B. Keep the dog under observation for 10 days, with examination by a Vet on day 0 and day 10. If the animal remains healthy, no treatment is needed.
   C. Since the animal is apparently healthy, no treatment is needed.

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RABIES

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SGT Lewis F. Goddard Memorial Cross, OSS
Jedburgh, KIA, France, 1944

Attack on Bunard Special Forces Camp (A-344)

Sergeant (Retired) Robert D. Pryor

I was a member of Detachment A-344, 5th Special Forces Group. In 1969, our camp was located in III Corp, 65 miles north of Saigon, in Phouc Long province. Our B-team was B-34, which was at Song Be. Other A-camps under B-34 were A-342 at Dong Xoai, A-343 at Duc Phong, and A-341 at Bu Dop.

The camp at Bunard was established on April 2, 1967 via Operation Harvest Moon. That was a mass tactical jump involving A-503 Mike Force personnel and a split team from Dong Xaoi. Lee Wilson commanded the operation. Over 300 troops jumped in what was Special Forces' first mass jump. The jump was followed by approximately 700 troops in a heliborne insertion.

The purpose of the camp was to deny the Viet Cong (VC) a couple of infiltration routes entering South Viet Nam from Cambodia. On November 27, 1967, MSG Samuel S. "Frenchy" Theriault was killed in action, an action for which he was awarded the Distinguished Service Cross.

I did not get to A-344 until January 19, 1969. I was all of 19 years old at the time. In spite of my age, I had already gone through the 12B (Combat Engineer) program in Training Group. I had then been assigned to 3rd Group on Smoke Bomb Hill. While in the " Third Herd", I cross-trained in the 11F (Operations and Intelligence) program there at the Warfare Center. While going through the O & I course during the day, I took Vietnamese language instruction at night. After completion of the 11F cross training, I was sent to Viet Nam. I arrived in Viet Nam on December 19, 1968, but was immediately sent to the Special Forces Operating Base at Nha Trang. While there I went through the four week Recondo School training.

At the completion of Recondo School, I received orders for Bunard. A few of the folks there at Nha Trang, and later when I was passing through Bien Hoa en route to Bunard, were making fun of Bunard. They called it Disneyland and summer camp because of the lack of meaningful action in that Area of Operation (AO) during the previous few months. Actually they were right. There was not much action going on at Bunard when I got there.

Most of the guys on the team when I got there were new to A-344 as well. We were essentially a brand new team nearly all assigned there within a few weeks of each other. We implemented a program of aggressive patrolling, and soon attracted unwanted attention from the VC. Slowly things picked up over the next few months, and I received my first Purple Heart for action on April 17, 1969.

A chain of events fell into place that eventually culminated in us nearly losing the camp to Sir Charles (VC). In the spring of 1969, the First Infantry Division began a road clearing operation up Highway 14. The purpose of the operation was to clear the jungle back 300 meters on each side of the highway. What I did not know at the time was that this was a precursor of the U.S. incursion into Cambodia that took place early in 1970. Highway 14 was the primary route to get there on the ground, and it ran right past Bunard.

The terrain on our AO was rolling hills with steep gullies, streams, and an occasional swamp thrown in. It had a fairly thick triple canopy jungle covering nearly the entire area of operation. We had a "New Life" hamlet not too far outside of the camp. Basically a refugee facility, there had traditionally been a hamlet there even before the SF presence was established. There were a lot of Viet Cong and sympathizers in that village, but hey, it was their country.

The team for most of this time consisted of a captain as the commanding officer (CO); a first lieutenant as the executive officer (XO); a young second lieutenant as the psychological operations-civil affairs officer; a master sergeant as the team sergeant; a sergeant first class senior intelligence NCO; an sergeant first class commo sergeant as our only O5B qualified individual; a sergeant first class as our one and only weapons sergeant; a staff sergeant as our senior medic; a sergeant as our junior medic; and one each full bird corporal, specialist four as the junior Intelligence sergeant and the team's only engineer. We actually changed weapons men in about April, but none of us survivors of the team can remember the date,

even the one that replaced the first one. Our team sergeant was John Nowlan, and the weapons man for the second half of my time there was Daniel Dudley. Basically we had a ten-man team during those early months. The lowest ranking guy on the team was "Shithead," our dog.

Team attrition set the events in motion that nearly cost us our lives. The 1LT XO belonged pushing basic trainees, and not on an A-team. He was arrogant, yet incompetent. He felt that the silver bar on his shoulder demanded he get the respect of all of his subordinates on the team. Well, perhaps that is true according to Army regulations, but not in practice. He and the team sergeant did not get along. He actually did not get along with anyone except the captain, but he really had trouble from the team sergeant.

After doing some concrete work on the tactical operation center (TOC), the team sergeant (Nowlan) took a nail and wrote all of our names in the wet concrete. I covered the concrete with wet burlap to help it cure without cracking. No one saw the names until the concrete was as hard as woodpecker lips. The team sergeant took us all out to see his handiwork. He pulled back the burlap, and there were all of our names. The list started with the captain, then the second lieutenant, then the team sergeant, followed by the intelligence sergeant, the communications sergeant, the weapons sergeant, the senior medic, the junior medic, myself, and then Shithead the Wonder Dog. Last, and evidently least, was the executive officer. He stormed down into the TOC, summoning the CO. I really did have business to do in there, so I was privileged to witness the conversation. With tears running down his face, the XO pleaded to be transferred anywhere because he received no respect from his teammates. Well, he was right. The most respect I could ever muster for the man was to call him lieutenant. Nowlan just called him Junior. Anyway, Junior's wish was granted.

The 2LT became XO, and was promoted to 1LT. I cannot remember which came first, the rank or the job. We were now down to nine men on our detachment.

The Big Red One road clearing operation advanced to Bunard by early June of 1969. They set up a camp directly across our chopper pad from our own camp. They used this as a forward operations base, or temporary headquarters, fire support base, or whatever Legs called such things. Their camp was complete with fortified fighting positions and bunkers. Their facilities rivaled ours in both size and quality. It was a pretty good facility.

By mid June, the operation had advanced perhaps eight kilometers up Highway 14 beyond Bunard. Some smart cookie at USARV decided that the operation would be more secure if camp strikers from Bunard did security patrols to protect the Big Red One because our strikers were familiar with the AO. Our strikers were replaced with a bunch of Saigon Cowboys. I always felt that these temporary CIDG troops were heavily infiltrated with communists and communist sympathizers. Those Saigon Cowboys that were not outright communists were draft dodgers. With our camp now staffed by individuals of dubious character, our position was tenuous at best. Things were starting to go down hill at this point.

As you know, those of us in Viet Nam were entitled to a couple of weeks of rest and recreation (R & R). The team sergeant and the junior medic elected to take their R & R together. They left on Monday, June 16th, off to Australia. This left the team temporarily down to just seven men, and we always kept two men out on patrol away from the camp. One more stone to pave the road to disaster.

Meanwhile, I was up working a radio relay site on the top of Nui Bah Rah, a dormant volcano just outside of Song Be. In the very early morning hours of June 16th, I was doing a routine commo check with whoever was on radio watch Bunard. We did these commo checks at least once per hour, even in the dead of night.

At about midnight or 0100 hours I received no response from Bunard. I became concerned, in light of the presence of the Saigon Cowboys down there, and with our regular CIDG troop out away from the camp. I kept trying to raise Bunard but to no avail. Soon others on the net could tell from my voice that I was starting to get excited. They too joined in with trying to raise anyone at Bunard. After an hour or two of others on the net trying to raise Bunard, someone at the B-Team went and woke LTC Mearlen "Pappy" LaMar and told him that we had lost commo with one of his A-teams. By now there was little that could be done. I could actually see Bunard from my position, even though I was about 20 kilometers (klicks) away. I knew that there were no explosions, or tracers visible from my position. I saw only blackness, and reported this to Pappy.

Then, at about 0400 hours, MSG Nowlan came on the air, and asked what all the excitement was about with everybody screaming, whistling, and making all kinds of noise over the net. One of those making noise was Pappy LaMar. When he started talking to Nowlan, the rest of us shut up.

Pappy asked Top (Nowlan) where he had been for the last nearly four hours. Top calmly replied that he had been asleep, and just now came in for his shift on radio watch. Pappy asked Top when he was due to come on shift, and Top said 0100 hours. Pappy told Top to look at his watch. Top's momentary silence spoke volumes. Pappy asked Top who he had just relieved on radio watch. Top told him that it had been the Captain. Pappy told Top to go get him.

You can probably guess how the conversation between Pappy and the Team CO went, so no need to give you a blow by blow. Essentially the Captain fell asleep on radio watch, and Pappy knew it. Then, to pour salt in the wound, when the Captain woke up, he didn't even bother to come on line to report, even though it was Pappy LaMar on the horn by this time trying to get a response. Pappy was not pleased. The conversation ended with words to the effect that they were pulling me off the mountain that morning as my time there had ended, and that Pappy was going to be on that chopper when they brought me back to Bunard. The Captain had better be sitting, bag and baggage, on the chopper pad when we got there.

The team was now down to eight men. Two heading out on R & R that same day and two on patrol, leaving four on site. Due to a scheduling glitch, or some other stupid mistake, we now had one medic on R & R, and the other was out on patrol. Folks must have figured that we would be okay because we had the Big Red One sitting just outside the gate.

When the captain left, he took one piece of critical need-to-know information with him, and did not pass it on to 1LT Parda, who now became the CO, even though only a few short months earlier he was a green "Second Louie." We were getting a new CPT as the team CO, but Parda would have to maintain command for the five or six days until we could get a replacement. Not a problem, we had the Big Red One sitting right outside our gate.

Well, that critical bit of need to know information that the CPT took with him was that the Big Red One was about to bug out. They were moving their position up the road another ten klicks or so to keep it closer to the forward progress of the road clearing operation.

On Thursday afternoon, three days after Pappy canned our former CO, the Big Red One pulled out with only a few minutes notice to us. We had no idea that they were about to leave until they started loading their equipment. John Parda (our new CO) and I went over to their compound to assess the situation. Parda and I, and a work detail from the camp, started dismantling the facilities, but there was very little we could do in the few hours before sunset. All we could do was hope that we could hold on a few days until we could get this installation, located just on the other side of the chopper pad, dismantled.

The camp was now being defended by four USSF. We had no SF medic, only an indigenous medic or two. None of us were fully cross-trained as medics, but at least we all went through some medical training as part of phase I in Training Group, and additional medical training at Redondo School. SSG Orona, our senior medic, and SGT Larry Crile, our junior medic, both kept all the team members involved in some sort of their work. We helped them on medical civic action programs, and were always welcome to observe them or even participate when they were plying their trade at our dispensary. I even had a couple of civilians call me Bac Si (doctor) on occasion, simply because I was there working with the medics. It was kind of flattering. This cross-training by osmosis was the extent of the medical training for the four of us in camp at that time.

The VC decided not to afford us the luxury of tearing down the unoccupied camp adjacent to ours. The attack started at about 0130 hours that night. 1LT Parda, SFC Charles Hinson, SFC Carl Cramer, and I went to our alert positions. It soon became painfully obvious that we were receiving no communications from the indigenous troops, and all of the shooting was being done by VC. Somewhere between the first and second shot, all of the Saigon Cowboys disappeared. Perhaps they were the ones shooting at us. I have always sort of suspected that was the case.

The VC came across the chopper pad from "their" camp and breached our camp's south defenses. When we realized that we had no one there to direct any fire, or even impede the enemy in any way, 1LT Parda called us together and said that someone needed to go out there and try to mount a counter attack, and direct mortar fire and aircraft when they arrived.

Now, I want to make this clear - I am no hero. Parda, Hinson, and Cramer were all married with children. John Parda had been notified only two days prior that he had become a papa for the first time. I did not even have a girlfriend, much less a family. I knew then that I would never be able to live with the memory of one of those three guys going out and getting wasted to save me. While Parda was still talking, I did not even give him a chance to finish. I grabbed Thom, the Vietnamese interpreter, and instructed him to come with me. Thom had very little military training, but did as he was told. He and I headed out to the south wall and engaged the enemy.

Rockets, mortars, grenades, and satchel charges were landing all around us. At one point we were working the trench line, as the sappers had been slowed down significantly. Thom was in front of me, as we were working our way to the east. He stopped, and asked me to go in front. It didn't matter to me because the enemy was to our right, not in front. Within a few seconds of us changing places, a rocket or mortar landed right where I had been standing. That was my first wound of the night. I turned to tell Thom that I was hit, and all that was left of him was an arm and his chest.

I continued to mix it up with VC for a bit, working the east wall where an element was attacking across the airstrip. The VC regrouped and mounted a new assault on the south perimeter. That was where I made my last stand, and where SFC Hinson found me later. That is where a Cambodian medic, I believe that his name was Met, gave his life trying to plug up some of the holes in me. My heart has always ached for both the medic and the interpreter. I have always felt responsible for the death of both men. I know that, had I not gone out there, they were likely to have died anyway, but that is little consolation when thinking of the death of two great indigenous people.

It got worse. After the fighting subsided a bit, 1LT Parda sent Hinson to try to find me, which he did. Hinson got me back to the TOC, where he and Parda began feverishly working on me. They cut off what was left of my clothes, and began working to stop the bleeding. Cramer was on the radio pleading for a medical evacuation (MEDEVAC) that was not coming. There was no secure landing zone (LZ). The Communists occupied one side of the LZ, and my team held the other side. Unfortunately, the team was now down to three, with me out of commission.

As I was lying there being worked on by my teammates, I looked over to the Vietnamese Special Forces side of the TOC, and there they were, the entire contingent was huddled together in fear. None of them was lifting a finger to help, or even defend the camp.

While I was out there on the perimeter, I gave myself two syrettes of morphine. If you have head, chest or abdominal wounds, morphine is not recommended. I had several of each. After Hinson rescued me, I talked him into giving me two more syrettes. Fortunately my body was adequately ventilated, and the morphine apparently drained out almost as fast as it was being squeezed into me.

The last words I ever heard spoken at Bunard was SFC Cramer pleading over the radio, *"Please don't let this kid die here on the floor of my bunker!"* I lost consciousness, and woke up several days later.

You may find what happened next hard to believe. One ballsy chopper pilot brought his bird inside the camp itself. He landed in that area just outside the front gate of the inner compound, but inside the outer defenses. This area was a clearing that we used to form up for patrols and line up the CIDG on pay-day. There were no lights, but plenty of obstacles. Twice the chopper had to abort because of ricocheting bullets. On the third try they got me.

SFC Hinson took me out there alone. He held me over his shoulder with one hand, and with the other he held a flashlight pointed upward. Hinson had to stand there not really being able to see the chopper until the last second, trusting the chopper pilot to bring his bird nearly straight down into that small area, and to not hit any obstacle that might bring the chopper down, killing all of us. Hinson told me that the pilot brought the Plexiglas down to within six inches of the flashlight. He threw me on, and up it went. Things got only slightly worse after that. The bird made it out and back to the 24th MedEvac unit in Long Binh okay, but enroute, the guys on the chopper thought that it would be best if they pump some morphine into me. I later learned that I nearly died from a morphine overdose.

At day break the morning after I was wounded, they brought in the Mike Force to Bunard. The camp was secured, and the Communist's camp was dismantled. Within about a month I got up out of a wheel chair, never to look back. By the middle of August I was at Letterman General Army Hospital in San Francisco. Just two months after being wounded, I was out drinking and chasing women again. I even went to Reno for a weekend. I took a 30-day leave in the late August, and the Army started my medical retirement proceedings when I got back. By the middle of October, I went home on terminal leave. I was retired from the Army on Veterans Day, November 11, 1969. Three months later I went and registered to vote for the first time. Prior to that, I wasn't old enough.

SFC Hinson was the only other member of the team that was wounded that night. He received a relatively minor wound. Minor to the extent that he was still able to function normally. The only medic that I know for sure that was available to us in the camp that night was the Cambodian that gave his life trying to help me. He died before he could do much good for me, and I got wounded more severely later in the fight anyway. It was just my three team mates applying common sense

to stop the bleeding enough that I could hold on until the could get some help. I say they did a pretty good job.

Before SFC Hinson found me, I assessed my wounds to be to such that, had I been in a fully operational hospital operating room at that time, they still would not be able to save me. I accepted my imminent death. It appeared to be even more of a certainty due to the fact that the only ones who knew where I was were VC, and they did not think too highly of me. I guess I was wrong about the seriousness of my wounds. That is probably why I was an engineer and not a medic.

I believe that I was in surgery within four hours of my receiving the initial wounds. Much of the delay was due to the fact that I did not tell my teammates that I had been wounded. Then when my wounds became very serious, my radio was like me—it had its brains blown out. Well, at least I was partially functional. Another reason for the delay was the fact that there was no secure LZ for a MEDEVAC.

According to my records, the initial surgeries lasted about 23 hours. It was done in stages. Of course, they did whatever needed to be done to stop the bleeding. Then they went in and cleaned up my head wounds. My teammates were not aware of the severity of my head wounds. They saw the holes, but they did not realize the extent of the damage to the skull and of course had no idea about the damage to the underlying brain matter.

When I had first arrived in Viet Nam and was in-processed at Cam Rahn Bay, they had all of us line up and turn in our field jackets. Then they issued everyone a steel pot and flak vest. Like a fool, I turned in my field jacket and started to grab a steel pot. The clerk-jerk there then said that I did not get either item. When I asked him why, he said because he thought green berets were bullet-proof. Well, I just chalked it up to experience, but this smart guy almost cost me my life. On the night of the attack, I had no helmet and my beret in its usual position in the grenade pocket of my trousers. I never was one for wearing hats.

Many of my wounds were left open for I think about five or six days, then a secondary closure was done on the last of the wounds, with the exception of the loss of the outer right forearm muscle. That was too large an area, and it was repaired via a skin graft perhaps about a month later.

There is a very funny anecdote regarding the skin graft. Prior to the actual procedure, they had me strip down and get up on the examining table so they could find the best donor site for the skin graft. The doctor looked and looked but had trouble finding a large enough area without any wounds. Finally he found one and commented on how odd it was. The only place on my entire body that did not have at least some minor wound was a section on the outer portion of my right thigh were my beret was stashed. I still have that beret. It is a bit blood stained, but there is not a scratch on it. I guess it was bullet proof after all!

Rehabilitation was nothing by comparison. There were many guys that went through way more than I did. I was determined to be up and on my own in less time that the medical personnel felt was necessary for my wounds.

I was not debriefed after being wounded. This was a big mistake. I do not know if they did not feel it was necessary or if I just fell through the cracks. I did not get an opportunity to talk about what I went through until September 1997, the day I joined the Special Forces Association. I was out of touch with my Special Forces brethren, and no one else could possibly understand. Worse than that, folks would want to patronize me. The rest of my therapy came over the three years between joining the association and the day the surviving members of A-344 got together in October 2000. As far as I am concerned, from that point on my recovery was complete.

The following is a little break-down of my disabilities, as rated by VA:

Epilepsy rated at 80% disabling. This is due to my head wounds. I received a minor wound to the right temple, a moderate wound to the center of the back of my head, and two major wounds to the right side of my head. The guys at Bunard prepping me for the MEDEVAC may not have realized that just behind and above my right ear were two wounds, not one. CT scans of my head reveal metal fragments on two parallel paths passing most of the way through my head. Anyway, my seizures are not bad. I am fortunate to have a 20-minute aura with my seizures. I know 20 minutes in advance when a seizure is about to take place. That gives me a lot of time to do something about it, frequently even staving off the seizure altogether. I have developed my own biofeedback techniques that have proven to be very effective at preventing or stopping my seizures. Because of this, I do not take any anti-convulsives for the epilepsy. My aura allows me to drive, or enjoy any and all other activities without fear of a seizure getting me in trouble. About the only thing that one might notice that is a manifestation of my epilepsy is my staring off into nothing.

Skull loss with headaches rated at 50% disabling. There is a 4 1/2 inch hole on the right side of

my skull. It was repaired with a plastic plate in February of 1970. The material that the plate is made from is far superior to bone, so the area is quite safe and secure. Even the doctors who examine me are very impressed with the job done by the original surgeons who put in the plate. As for the headaches, they can be pretty bad from time to time, perhaps about once a month. Ordinarily I don't even notice them.

Vision loss rated at 30% disabling. I lost the eyesight on the left side of both eyes, and part of the lower part of the visual field of both eyes. I only see in the upper right hand portion of the visual field in either eye. That took me a couple of years to get used to. In order to drive, or even walk around in crowds, I had to learn to continually sweep my eyes back and forth such as radar does, and continually put the picture together in my head. Hey, it works for airplanes, and it works very well for me. The only problem I have is when I am in a situation such as sitting back and relaxing where I don't have to be concerned with what's around me, I quit checking. Sometimes I will bump into somebody, or knock something while reaching out with a hand. This does not happen very often, and is not much of a problem.

Post Traumatic Stress Disorder rated at 30% disabling. I am an intolerant asshole, and rated as such by the VA. It seems that I have a pretty low opinion of most folks, particularly outside of the SF community. I tend to call them phony bastards. Hell, I was that way before I went to Viet Nam, but I accept the stupid rating

Residuals of wounds to my right forearm rated at 10% disabling. I lost a fair sized chunk of the muscle on the right forearm, and there is some nerve damage in that area as well. I have difficulty doing things with my arm fully extended. I may drop something as light as an ink pen, if I try to hold it with my arm stretched out as far away from my body as possible. This is not a problem. I just don't try to hold things in that position. In close to my body, I'm probably as strong as any 52-year-old.

Residuals of wounds to my right leg rated at 10% disabling. I do have a Bledsoe Force III knee brace that I have to wear sometimes when it gets extremely cold. My wife tells me that the brace thing is not due to the temperature. She says it is a psychosomatic thing because I don't ever want to go Christmas Shopping with her. She may be right. I don't need it much in January or February, and those two months are even colder around here than December. Anyway, in warm weather my legs are fine. They will start to buckle momentarily from time to time, but they don't cause me to stumble, or anything such as that. As my activities as watermaster, farmer, avid backpacker, snowshoer, and hiker are constantly putting my legs to the test, you can see that they just aren't a problem most of the time. I don't even need the knee brace when I go snow shoeing.

Tinnitus rated at 10% disabling. This is an almost constant ringing in my ears. I literally got my bell rung at Bunard, and the damned thing is still going off. Actually most combat vets suffer from tinnitus. If it is due to combat trauma, or instrumentalities of war, even if it happens during training, it is rated at 10% disabling. I would imagine that all of the guys on A-344 would pick up this gravy 10% disability if they would take the appropriate steps.

Multiple scars rated at 10% disabling. Many of my scars are quite prominent, and VA gives me a 10% rating for them. I guess it has something to do with mamas saying, "Don't stare!" That doesn't bother me in the least. I am very proud of my scars, I feel I came by them honestly.

I have a bunch of disabilities rated at zero percent disabling. That means that the disability exists, but is not severe enough to interfere with employment or day to day life. These are all mostly just residuals of wounds to the various parts of my body, and truly are no big deal. Both of my ear drums were perforated. This results in bilateral hearing loss, but I get by except when there are several people talking at once, or some sort of background noise.

Then there were the wounds to the groin. One penetrated my bladder on the right side and was surgically repaired, and everything works normally. I just have a couple of good-sized scars there as reminders. The rather large shrapnel wound in the crease at the top of my left leg only resulted in some loss of feeling on the inside of my left leg, all the way down to my foot. This only caused a problem one time. My pant leg caught on fire once, and because I can't see there, and have no feeling there, I didn't realize it until the smoke got in my eyes. By that time I had some second and third degree burns on my leg. A once in a lifetime freak accident. Now I don't stand so close to fires. Live and learn. It is pretty funny to look back on now.

The wounds in my groin area had zero effect on me sexually from day one. I was sure concerned about it at first, and actually have a very funny story about that.

There are a couple of things about my being wounded that have a much more profound effect on my life, but they are not considered disabilities under the law, and thus are not rated by VA. In 1982, I participated in the Viet Nam Head Injury Study in Washington, DC. This study produced two findings that are quite relevant.

First, of the 1200 or so vets who survived their head wounds, only ten percent had a normal sex drive. Thirty percent had no interest in sex whatsoever. A full sixty percent had an over-active sex drive. It had something to do with certain types of head injuries causing fixations or retarding development that happens in connection with the aging process. In other words; we are stuck with the sex drive of a 20-year-old. I will have you know, Robert wound up in the majority group here.

The other finding was something extremely rare. I have a condition called prosopagnosia. This means that I cannot recognize faces. Anyone's! I do not recognize my wife and children, I frequently do not notice what race someone might be, I can't even recognize that ugly SOB I see in the mirror.

Prosopagnosia is caused by a person losing identical portions of the occipital lobe of the brain on both sides. Now you can see why the condition is so rare. The two wounds that penetrated the skull above and behind the right ear passed through to the left side, taking out matching areas of the brain on both sides.

Now, picture this: A guy has the sex drive of a 20 year-old. Then, every night when he is getting ready for bed, a beautiful woman comes in his room. She is a total stranger, but she gets undressed and gets in bed with him. Yep, I never get tired of that. No wonder the VA does not consider those two things disabilities.

What do I want to tell all of the guys out there on the Teams today? Never…ever take short cuts when it comes to cross training. Ensure that everyone is cross-trained on everything! Do not let this slide. Numerous guys were saved in Viet Nam because of cross training and I pray that yours will be also.
God Bless you my brothers.

Expedient Medic

Airway

Warner Anderson MD

In a recent range accident, the medical aid kit was blown up in the detonation of the bomb. When the MEDEVAC landed, there was no advanced airway equipment on board, since the helo was outfitted at the level of the aviation medic, not the 18D on the ground. What priorities should the SOF medic or doc follow in establishing a kit of essentials, to be with him at all times?

For the medic, nothing ratchets up the anxiety level more than airway management. Not only is "airway" number one in the priorities list, it is one of the few opportunities the medic has to save the patient or kill him on the spot.

The medic can bring a bewildering array of airway appliances with him to the field, given an unlimited budget and innumerable porters. He can bring oropharyngeal airways, nasopharyngeal airways, mouth-to-mask resuscitation devices, oxygen masks, bag-valve-mask (BVM) assemblies, pry-apart-your-clenched-teeth plastic screws, PEEP valve-BVM assemblies, CPAP, BiPAP, laryngoscope, ET tubes, Combitubes, LMA, intubating LMA, tracheostomy tubes, cricothyrotomy sets and introducers, pulse oximeter, capnometer, lighted flexible wand (stylet), MacGill forceps, suction machine and catheters, and so on.

The wide variety and imagination behind these products reflects the insecurity and importance of being able to manage the airway under any circumstances. Yet few of these are expedient.

As an experiment, I told the 18D sharing this office, SFC Clint Bearden, that I personally was going to have an upper airway obstruction and the Heimlich wouldn't work. What could he do?

Then I tumbled out of my chair onto the floor, clutching my throat and making pitiful gagging noises.

SFC Bearden stood up, thinking through the situation out loud. As he did, Captain DuGuay, the USAF nurse here, entered into the room and stepped over my gagging and supine body to get to her computer. I recovered enough to tell her that was "just like a nurse."

SFC Bearden pulled out his Gerber pocketknife, started looking for a ballpoint pen, and I had a miraculously spontaneous recovery.

I asked him if he had any other sharp object besides his pocketknife, and he produced a sterile Number 10 scalpel blade from his wallet – he had forgotten about it.

The "gold standard" in emergency medicine for a secure airway is an ET tube securely taped in place and a capnometer showing appropriate CO_2 levels for exhaled pulmonary gases. Anything less is suboptimal. But special operations forces never operate in an optimal environment. Each mission implies a particular risk. So the load-out for a direct action mission may include a fair amount of airway support, limited by chopper payload. A guerrilla mission may de-emphasize airway in favor of indigenous medical support, limited by rucksack or pack animal payload.

But what the special operations medic really needs is a cargo pocket-size ABC kit that he can slip into his BDU's or backpack, to have with him at all times. Let's look briefly at some options.

North American Rescue Products is marketing a fold-up laryngoscope kit that's smaller in size than a rolled-up sphygmomanometer. The one in the bottom of my backpack, sent to me by a SEAL, weighs about six ounces including batteries. I haven't tried it on a human, but it looks like it would do the job if I did mine. The bulk and weight are not really prohibitive, and retail for the whole kit is about $70.00.

When I was a B-Team medic, it was an era of sheath knives. I used to recommend that all the A-Team medics tape a scalpel blade (still in the foil) to the sheath. One of the emergency docs who works with me tells me that as an 11B on a Mike force in Vietnam, he did two successful cricothyrotomies with his Randall knife, which he always kept sharp enough to shave with. But if you're coming at me knife in hand to do a cric, I'd rather see a Number Ten blade than a Randall.

An extra scalpel blade would fit nicely in a medic's Leatherman pouch, as well.

Once you get the vocal cords visualized or have cut a hole into the trachea, you generally need some sort of a tube to ventilate through. Have you ever tried to breathe through the barrel of a ballpoint, or through a 14-gauge needle? It doesn't work. Exhalation is passive, and you can't get the air back out of the lungs

once you've forced it into them. Try this one at home and see for yourself (no cutting! Just breathe through a ballpoint pen barrel). Your CO_2 retention will drive you mad, and you won't last longer than you can normally hold your breath.

A better alternative is just carrying an ET tube. We all learn to intubate with an 8mm on adults, but if you intend to do a surgical airway, consider a cuffed 5 mm tube. It also should fit a kid down to four years old or so, or a cricothyrotomy wound and still allow enough ventilation for an adult.

You'll need some waterproof tape to secure the tube. Wrap some athletic tape around two tongue blades back-to-back. Now you can push down the tongue to visualize obstruction in the pharynx with your dual-use tongue blades, then unwind the tape to secure the tube.

A couple 12- or 14-gauge needles for chest decompression could complete the package.

In order to expand your capability and control life-threatening hemorrhage from a limb, throw in a tourniquet. A one-handed model should be on the market soon, and we will try to review it here.

So, an ABC kit in a large zip-lock bag:

1. Small barrier mask for rescue breathing
2. Number 10 scalpel blade with or without handle
3. Suitable size ET tube(s) (8Fr & 5 Fr)
4. 2 tongue blades taped together with several wraps of waterproof tape
5. A pack of 4x4 gauze
6. Penlight, or penlight-based laryngoscope set
7. Spare batteries
8. Two pair exam gloves
9. Tourniquet

With this packet in BDU's, daypack or attache case, the SOF medic should be able to handle the majority of survivable airway problems, plus extremity hemorrhage.

Has anyone tried to clear a foreign object from the pharynx with a Leatherman, Buck or SOG tool?

EditorsNote: Mention of a product by name does not imply endorsement. Each mission and each medic is different, and one set of gear will not satisfy all needs.

THE CINNAMON TREE

Ben Roberts

In 1967 I was the medic on a search and destroy mission in the Central Highlands of Vietnam with about 30 Montagnards and one other American. We had been out of camp for about 6 days and had all run out of the indigenous rations of little bags of rice and squid, rice and minnows, etc (I think I liked the squid best). The SF team always ate the same rations as the indigenous folks, as they took up less space than trying to hump a case of C-rations.

It was nearing late afternoon, patrolling down a narrow trail that led through a canopy of tall trees. We were wet and miserable, having been soaked by rain most of the day. The Montagnards ahead of me suddenly diverted their attention to a tall tree resembling a eucalyptus tree, and began trying to pull off long twenty-foot strips of bark and twisting them into ropes.

My interpreter told me that we had found a large cinnamon tree and they were going to take the cinnamon bark back to their families after the mission. After everyone had gathered their share of bark, we traveled another one-half mile and decided it was time to get off the trail and make camp before dark.

After crawling through the brush about one hundred yards from the trail we tied our hammocks to the nearest branches in a thicket where we felt we would not be discovered. There was very little room to move about and hammocks were strung wherever they could be tied. Our standing mission procedure was always camp off the trail and no fires, smoke or noise after dark, and booby-trap the trail.

As I said, we were all wet and miserable and many of the Montagnards were making hot tea from what was left of their rations. Vietnamese tea leaves a lot to be desired and I remembered as a boy in Tennessee I once drank some sassafras tea made from a tree root, and perhaps I could make a better hot drink with a pinch of that cinnamon in some water.

The Montagnards shook their heads no, but I was way too cold to pay much attention. After all, it was "cinnamon" and it was edible. I placed a small piece in a C-ration can I carried for a cup and proceeded to boil and drink it.

It tasted good – better than that native tea. We put out our small fire and settled in for the night. Soon you could not see your hand in front of your face in the darkness. I should have paid more attention to where we were all camped – there were thirty or so of us in less than a twenty-foot radius.

Soon my stomach began to cramp and gurgle and it was all I could do to get out of my hammock, reach into my pack and grab the paperback book I carried for hours of boredom and which also served as my toilet paper. In the darkness I stumbled several feet away from my hammock, dropped my fatigue pants as fast as I could, and cut loose with the most foul-smelling explosive, gut-purging squirts of hot steamy diarrhea with had just a hint of rotting cinnamon.

This was swiftly followed by more foul squirts as voices in the darkness began to complain indignantly that I was shitting next to everyone's hammock and packs.

I stumbled back and found my hammock and no sooner got back into it when I was again rocketed out by another gut-wrenching attack. This time I crawled out on the other side of the hammock and proceeded to seek relief in another direction in the dark only to find myself stumbling into another hammock before dropping to the ground and relieving myself.

I mean there were no choices here, and this continued throughout the night until I had fouled the entire campsite in all directions. The night was filled with a hundred curses and smelled as though we had camped next to a rotting buffalo dead two weeks.

As dawn came, we quickly broke camp. The entire area was littered with all the pages of my book and I was looked upon with disdain by all of my fellow travelers, who continued to curse me all the way back to the A-Team camp.

The moral of the story is that if an indigenous person tells you not to eat or drink something, *believe him* – and carry a spare book!

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"It is unreasonable to ask my tears to bear the sorrow of autumn, as the light changes the color even of the cinnamon tree in the moon to red and yellow" —Shuzei's daughter (late 12th century Japan)

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BK Sports Watches

Don Shipman, PA-C

On one particular excursion to the savanna, two of the medics came up with what they believed was the ultimate scam for getting the maximum value for American trade goods. For a week or so prior to their departure overseas, the would-be entrepreneurs made it their business to eat at the local Burger Kings at least once per day (often twice). Their reasoning: procurement of a red, yellow, or blue plastic Sports Watch with each meal purchased.

Now, for the uninitiated the above revelation bears some explanation. There are certain "trade items" that are highly valued in undeveloped countries around the world. Some of these include: watches, logo-embossed wearing apparel, running shoes, cameras, and Walkmans. It is standard practice among many SOF warriors to take the above trade items overseas for the purpose of trading for unique items in the countries that they visit. These two medics, however, decided that given their pioneer heritage and capitalist upbringing it was high time that someone, namely themselves, elevate the bar to a new level. Enter the BK Sports Watch.

After a two-day flight from the United States with an overnight in the Azores, the team arrived "in country." As the C-141 touched down and began taxiing to the terminal, our two intrepid "fur traders" as if on some silent, unrehearsed signal began removing their Timex Ironman and Casio G-Shock watches. They took their watches and shoved them into the very bottom of their air crewmen helmet bags and then magically (like rabbits pulled from a magician's hat) each pulled out a different colored "sports watch". They exchanged knowing glances from across the aisle and then, while disdainfully looking at their peers who were just waking up from their transcontinental flight, they began strapping on their highly prized trading accessories.

Once up-country, the team made contact with their host nation (HN) counterparts and the mission began in earnest. As luck would have it, the HN established the base camp ten kilometers from a quaint East African village that also hosted a safari lodge. And most fortuitous of all, the team was informed that a group of Samburu were in the immediate area as the forage for their cattle was green and abundant (often a rarity in that part of the world). Our two medics exchanged knowing glances yet again - in a country made up of vast expanses of muted earth tones their watches seemed to blaze eerily of azure and crimson. They began their unuttered mantra, *"Like bees to honey, like bees to honey..."*

As the sun began dropping out of sight on that first night a pair of curious cattle herdsmen came near the camp to observe this largest concentration of Americans that they had ever seen. They were dressed in typical Samburu fashion: colorful beads, copper and brass hoop earrings, bright orange and yellow waist wraps, and leather sandals. A seven-foot long spear competed their ensemble. Seeing these spears, our traders (being warriors themselves) gazed hungrily at these ancient weapons, sized up the prey, and began their stalk. The BK Sports Watches began glowing, even pulsating, like beacons in the dimming light.

The two medics approached the herdsmen in casual, friendly manner so common to Americans. They offered the time-honored greeting of *"Jambo-sana"* to the young men and were quite pleased when the men answered back in the Queen's English. The trad-

ing was on! Each combatant in this ancient form of negotiation began narrowing the focus of his attention. It rapidly became apparent that the young Americans were not interested in a pair of well-worn sandals, beaded or copper hoop earrings. Just as apparent was the fact that the young herders were not interested in parting with their spears for a mere foil encased Chocolate Nut Cake from the soldier's midday meal. As night closed down and the hyenas began cackling in the distance, the four opponents knew that the Two-Minute Drill had, at long last, arrived. In remarkably rapid succession, the BK Sports Watches stylishly adorned the wrists of the herdsmen and the young SOF medics stood posed with their newly acquired javelins reminiscent of ancient Sparta. Each looked at his partner then slowly at his opponent, smiled, burst out laughing – all the while exchanging those all too familiar "knowing glances".

Postscript: each group arrived back at their respective camps to a great deal of excitement and envy. The groups plied their successful traders with numerous questions about the negotiations, but the young men remained strangely evasive and non-committal. All wanted more of what the young men possessed. Piles of woodcarvings, spears, and jewelry began accumulating near the two Samburu. At the Special Forces camp much the same thing was happening, except that the team members were bringing old running shoes, cassette players, and T-shirts. Oh yeah, and our two enterprising medics strapped on two more Sports Watches. A trade route had been established…

Editor's Note – There I Was… will be an ongoing column aimed at providing our readers many humorous recollections as they follow the events of their fellow medics in the field.

Correspondence

Many thanks for providing this excellent resource to the SOMTB library. SFC Roemer brought the copies to the library this past Friday. Again, thank you for this resource. It will receive a great deal of use.

Margaret J. Harrison
SOMTB Librarian

Just finished reading the spring issue of JSOM. This is a great magazine!! Now, how do I get on the mailing list?

LT R Howes (former SF medic)
Germany

I received my copy of the Spring 2001 JSOM. In a word - OUTSTANDING! My compliments to all involved.

Thanks, Len Blessing

Apologies & Corrections

In the Spring Edition of the *JSOM*, we have a correction to the article, "Expedient Air to Ground Communications". The correct date for this incident is 1970 not 1967. Also, we overlooked the inclusion of the biography and photo of Dr. Peter G. Bourne in his article titled *Observations on Group Behavior in a Special Forces "A" Team Under Threat of Attack.* Our sincere apologies for this oversight are extended to Dr. Bourne.

Peter G. Bourne, MA, MD, is Vice Chancellor of the University and Chief Academic Officer, St. George's University. He has a distinguished career as a clinician and researcher, senior government official, international civil servant, diplomat, and author. Having served as special assistant to President Jimmy Carter, he was subsequently Assistant Secretary General of the United Nations. He currently chairs the American Association for World Health. Prior to his appointment, Dr. Bourne was the Chairman of the Department of Psychiatry in St. George's University's School of Medicine.

As the White House official in charge of health issues, Dr. Bourne led the effort to reform the nation's health insurance system; as Director of the Office of Drug Abuse Policy (the drug czar), he was responsible for coordinating US law enforcement, treatment, and foreign policy efforts to control the drug problem. Bourne was also the White House coordinator for presidential commissions on International Hunger and Malnutrition, Mental Health and Mental Retardation, and the US Commission on the International Year of the Child.

As Assistant Secretary General for the United Nations, Dr. Bourne directed the International Drinking Water Decade, a program aimed at providing clean drinking water to people worldwide. As part of that initiative, he launched a global campaign to eradicate the parasitic disease Guinea worm. Seventeen years later, this goal is close to realization.

Dr. Bourne was awarded his MD degree by Emory University in 1962 and his MA in anthropology by Stanford University in 1969. After a rotating internship at King County Hospital, in Seattle, he completed a residency in Psychiatry at Stanford University Medical Center. From 1964 to 1967, he was Captain in the United States Army assigned to the Walter Reed Army Institute for Research. He served for one year in Vietnam as head of the Army's psychiatric research team, where he was awarded the Bronze Star, Air Medal, and Combat Medics Badge. His research on the psychological and physiological aspects of combat stress is considered classic in the field of psycho-endocrinology. Dr. Bourne has held faculty appointments at Emory and Harvard Universities, in addition to St. George's. He has served on the jury for the prestigious Lasker Awards in the areas of health and biomedical research.

Bourne has more than one hundred scholarly articles to his credit, concerning areas such as alcoholism, infectious diseases, addiction, stress, and military psychiatry. He is the author of two full-length widely acclaimed biographies, Fidel: A Biography of Fidel Castro (Dodd, Mead and Co., 1986) and Jimmy Carter: a Comprehensive Biography from Plains to Post-Presidency (Scribners/Simon and Schuster, 1997). He has written and edited another eight books on medical and health matters. Most recently, Bourne coordinated a year-long study involving ten clinicians, which resulted in the 301-page report Denial of Food and Medicine: The Impact of the US Embargo on Health and Nutrition in Cuba and has drawn worldwide news attention. He serves on the editorial boards of several academic journals, including Psychiatry and the American Journal of Addiction Research.

Dr. Bourne is listed in Who's Who in America, Who's Who in American Politics, Men of Achievement, American Men and Women of Science, and Contemporary Authors.

Editorials

The A Team (Special Forces Medic in Viet Nam-The Early Days) is a very well written article that is easy to read. I think that it is a useful (even valuable) contribution to the history of special operations medicine, particularly regarding the Special Forces Medic. The author makes appropriate use of humor and anecdotes to give good perspective and insight to the early days of training in Special Forces, and specifically Special Forces Medics.

Dan C. Godbee CPT, MC, USAR

THIRD WORLD BLOOD RESUSCITATION

MAJ Lutz *et al* report an interesting case of HIV exposure through a novel, but perhaps predictable mechanism – a "fight bite." However, he also raises the issue of using blood and blood products (B/BP) in his and other Third World AO's. The need to carry post-exposure prophylaxis (PEP) is self-evident and authorized; the vexing problem is, will PEP protect from HIV inadvertently received during trauma B/BP resuscitation?

The indications for blood administration have changed a great deal over the past twenty years. In 1980, any hematocrit under 30% was sufficient indication for a couple units of blood. Then *gay-related immune deficiency syndrome* (GRIDS), later to be named *acquired immunodeficiency syndrome* (AIDS) when the condition was found in heterosexuals and intravenous drug users, called attention to the inherent dangers of blood supply.

Hemophiliacs, in particular, served as "canaries in the coal mine." Factor Eight was derived from the pooled plasma of many blood donors, some of whom sold their blood or plasma to support themselves. Thus, many hemophiliacs contracted blood-borne illnesses through the sheer statistical probability of exposure. Blood was screened for hepatitis B, syphilis, and numerous other infections. However, no good test could screen for *non-A, non-B hepatitis*, later called hepatitis C and D when specific viral and sub-viral pathogens were identified. And no test was or is 100% reliable to exclude human immunodeficiency virus (HIV) -1 or 2.

The entire issue of testing settles down to statistical probabilities of false positives and false negatives, versus true positives and negatives. If a unit of blood tests positive for HIV (or hepatitis), but in fact the test is wrong, the unit must be unnecessarily discarded. If the unit tests negative, but the donor was in the latent period of infection before antibody production, there will be no antibody to test positive, and the test will then be a false negative. Someone will get HIV from that blood.

Thus, setting test standards becomes a matter of public health policy – or economics. At what point does the cost of doing a test outweigh the expense of the disease(s) it prevents?

I checked the American Red Cross web site to try to find the risk ratio for contracting HIV from a single unit of blood. Non-attributable sources have reported one chance in 300,000 units, but I wanted to find it in black and white. Since the ARC is a major player in the US blood program, I thought it a good place to start. After a one-hour search of their site, I could not find a specific number. However, an article on nucleic acid testing suggests that false negatives will essentially be eliminated once nucleic acid testing, which detects the actual virus, is widely implemented.

The article further states that about one in 1,000,000 units of blood testing negative for the HIV antibody may have HIV, while about one in 200,000 testing negative for hepatitis C antibody may actually have hepatitis C virus. If these numbers are accurate, then the chances of contracting HIC or hepatitis C from ARC blood are vanishingly small. And it follows that a trauma resuscitation requiring four units of packed red cells confers a 1: 250,000 chance of HIV and 1: 50,000 for hepatitis C.

A press release from the National Heart, Lung and Blood Institute (NHLBI) confirms this optimism.

The industrialized nations, or "First World," are not uniform in their standards. A recent case rocked the French medical world – national policy in France on testing blood and blood products led to the infection of numerous hemophiliacs and charges of criminal negligence against the policy-makers. The case threatened to bring down the government.

Move to Africa, where MAJ Lutz and other SOF operate every day. According to the UNAIDS Project, Uganda in 1999 reported an 8% HIV-positive rate among prenatal clinic patients (down from 31% five years earlier). The Sudan reported 3 - 4% among prenatal patients; Kenya, 14%; Botswana reported up to 45% of the overall population is infected with HIV!

Hepatitis C rates are essentially unknown, not only in Africa, but even in sub-populations in the US.

Receiving blood in most countries outside the US is, thus, risky business. Even in the US, an informed consent is now required for blood administration. Perhaps the only thing riskier is refusing blood when it's absolutely needed for trauma. To refuse blood may be to choose death.

Absent a country-by-country evaluation of blood collection, testing and storage, what are the options in critical fluid resuscitation outside the US?

Clearly, crystalloid (Ringer's lactate, normal saline) and plasma expanders such as hetastarch and dextran are cornerstone temporizing measures. Hypertonic saline remains "a tool looking for an application." It may have a role early on in resuscitation, but only as initial therapy.

Hemostasis is often overlooked as a viable option. Jehovah's Witnesses have long refused B/BP on religious grounds, and several surgeons and centers in the US specialize in "bloodless" surgery. Maybe we should look to this body of experience for some answers in OCONUS semi-elective surgery, but this will hardly solve the trauma problem. Still, in trauma "stop the bleeding" ranks toward the top of the "things to do" list.

Some blood substitutes may soon come on line as oxygen carriers, supplanting the need for red blood cells, but not plasma and platelets. One of these products is currently approved for intraoperative administration – whether this means trauma or not is unknown – in South Africa. Perhaps it will also be available in neighboring nations as well. However, it has been found to cause transient reduction in kidney function and a slight blood pressure rise (the blood pressure effect may not be a bad thing in trauma). Unfortunately, the effects of these blood substitutes are of limited duration, since they are metabolized and/or excreted by the body in a matter of a few days.

So, while every SOF medical officer dreams of the day when he can carry a bag of temperature-stable blood substitute in his kit, and outfit every SOF medic with it for use on-scene, that day is not yet here.

MAJ Lutz and his colleagues all over the globe deal very much in the here and now. So when blood is needed in the veins, right now, what do you do?

If you're AB positive, lucky you. All your teammates can donate a unit of blood to your cause and you can maybe avoid indigenous blood. If you're O positive, you may be able to harvest blood from about 40% your teammates. If you're O negative, you're truly "hosed", since you can only receive blood from another O negative, and they represent only 7% of the population.

Assuming you can't get any teammates to donate for you, and you haven't banked autologous blood in the host nation for your next parachute jump, what's a medical officer to advise?

MAJ Lutz makes a strong case for having antiretroviral therapy on the spot. When the first priority is to save a life that would be lost without B/BP, there is no real choice in whether to give blood or not. Then the major concern becomes damage control. Combivir® and neldinavir are the order of the day, and may have a real role in preventing blood-borne infection by HIV.

The life expectancy of HIV is 14 years, but the life expectancy of untransfused major trauma approaches zero minutes.

Warner Anderson, MD

MedQuiz

History 39-year-old man with back pain after a motor vehicle accident. What are the findings? What is your differential diagnosis?

Answers

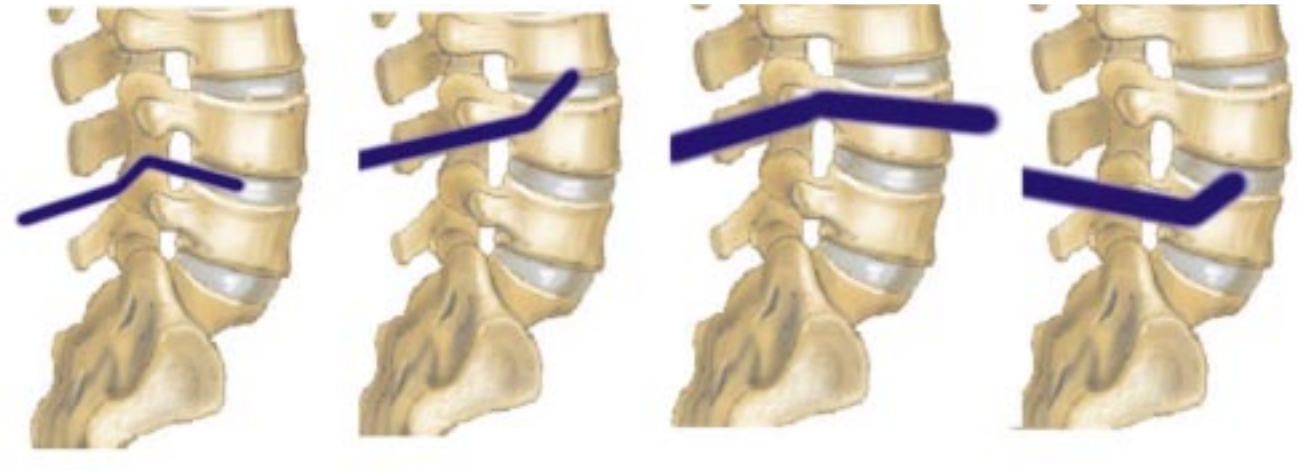
Posterior ligamentous disruption, L4-5.

The inferior facet of L4 is "perched" atop the superior facet of L5. Notice how all of the other facets are located normally with respect to each other. A grade I/IV spondylolisthesis of L4 on L5 is also noted. Minimal anterior wedging of T12 and L1 is also noted, which could possibly represent mild anterior compression fractures of unknown age.

The eagle-eyed observer noted the relative position of the facets at the L4-5 facet joint. Unlike the normal joints above it, these two facets do not articulate properly. Instead, the inferior facet of L4 is "perched" on top of the superior facet of L5. What does this signify?

There is a handy rule that I find very useful when dealing with subluxations and dislocations: don't perseverate on the malalignment itself — concentrate instead on the structures that normally keep things together. Soooo.... what normal structures have to be zapped in order for L4 and L5 to assume this perched position? Well, if you move from posterior to anterior, we see that the supraspinous ligament, the interspinous ligaments, the ligamenta flava, the capsular ligaments, the posterior longitudinal ligament, and possibly the posterior annulus fibrosus have to be torn to allow this new positional relationship between L4 and L5.

This injury is one of a spectrum called seat belt injuries, which are produced when a hyperflexion force is applied to a subject wearing a seat belt but no shoulder belt. Usual hyperflexion injuries in unrestrained passengers flex the spine around a fulcrum through the anterior column of the spine, and typically result in an anterior compression fracture of the body. However, the presence of a seatbelt moves the fulcrum forward to the anterior abdominal wall. As far as the spine is concerned, this converts the hyperflexion force into a distraction force. This makes all the difference in the world to the spine. Whereas a typical hyperflexion force crushes the anterior vertebral bodies to produce a compression fracture, a distraction force essentially pulls the spine apart. The injuries thus produced fall into these categories:



Posterior Ligamentous disruption | Chance Fracture-dislocation | Horizontal Fissure Fracture | Smith Fracture-dislocation

Posterior ligament disruption

- This may occur as a purely ligamentous injury, or may be associated with avulsion fractures of parts of the posterior vertebral body or of the articular processes. These injuries tend to occur more commonly in younger patients with more resilient spines. A rotational force is often part of the mechanism of injury. These injuries may be clinically unstable, and may require internal fixation.

· Posterior distraction fracture of the vertebral arch

- Chance fracture
  - § The fracture line extends through the spinous process, pedicles, transverse processes, and up through the posterior superior corner of the vertebral body in the classic fracture described by Chance in 1948.
- Horizontal fissure fracture (sometimes mistaken for Chance fracture)
  - § The fracture line extends horizontally through the vertebral body as well. Older patients with more brittle bones are more likely to get this fracture type. The posterior ligamentous complex remains essentially intact, other than the supraspinous ligament. This has also been termed a “fulcrum fracture”.
- Smith fracture
  - § The superior articular processes and a small posterior fragment of the vertebral body are included with the arch fracture. The spinous process is intact, but the interspinous and supraspinous ligaments are torn.

This type of injury typically occurs in a passenger of an automobile following a head-on collision. These fractures may be difficult to appreciate on axial CT images, as they are usually oriented parallel to the scanning plane. Reformatted images in other planes may help. Plain radiographic clues to these injuries include:

1. a “vacant” or “empty” appearance of the vertebral body on the AP film, due to angulation of the fracture so that the posterior elements no longer lie over the vertebral body.

2. a break or discontinuity in the cortex of the pedicles or spinous process on the AP view.

3. fracture or dislocation seen on the lateral view — as shown in the case presented above, this may be subtle.

Neurological injury to the spine occurs in about 15 % of seat belt injuries. This is in contrast to the much higher prevalence noted in spinal fracture-dislocations in general.

Other injuries

The abdomen and its contents are interposed between the spine and the fulcrum of injury, and may be injured in up to 15 percent of these spinal injuries. These injuries include ruptures or tears of the duodenum, distal small bowel, mesentery, stomach, colon, spleen, pancreas, aorta, the gravid uterus, and the musculature of the anterior abdominal wall (bruising or ecchymosis here should suggest the possibility of a seat belt injury to the wary clinician). In some cases, these soft tissue injures be more dangerous to the patient in the short term than the spinal fracture-dislocation itself.

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Photo Gallery

Ski training winter 1970/71
10th SFGA, B Company, ODA-17
Medics left to right: SGTs Edwards, Eggert, and Sprague
Note the "state of the art" ski equipment — white wooden skis with strap-on bindings, 6 foot poles, combat boots

Both pictures below were taken in 1967 in the Central Highlands of Vietnam at Camp A-223 Van Canh which was a freefire area.

SGT Ben Roberts, SF Medic:

Picture #1 shows us injecting children of our refugee camp against Cholera. We had several hundred refugees that we had assembled who were all suffering from malaria, secondary infections, punji stake wounds, and shrapnel wounds from land mines etc. We were losing a lot of children and asked the preventative med folks via our B team to come out and run some tests on the ground water. The sanitation was very bad and tests came back positive for cholera. I can remember keeping one young patient alive on Coca-Cola for a week. Tried venous cut downs etc. but the Coca-Cola gave the child nutrients and was treating his dehydration. I gave the mother a case of Coke to take home and feed the child. She sold the entire case and he died 2 days later.

Photo courtesy of Don Shipman

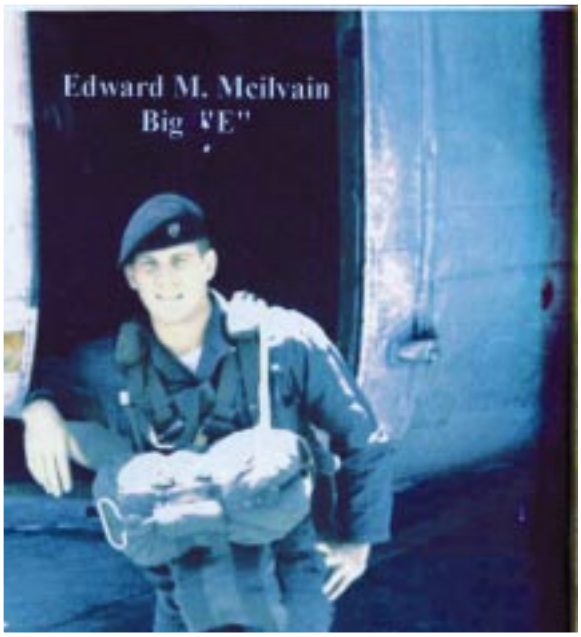
Picture #2 Shows a young Montangard boy who had a secondary infection in the armpit. He had been treated with a tribal remedy of cow dung applied directly on the wound and had been sick for several weeks. We took the boy to our dispensary for a couple of days and cleaned him up, applied bacatracin to the wound and gave him a course of penicillin shots and he responded well to our treatment. What I would like to bring to the attention of the new SF Medics is the importance of talking to all of the villagers to find out who is sick. We did not know of this boy's condition and he was not brought out to sick call. Only by asking one of the boy's neighbors if there was anyone else who needed to be looked at did we find this patient. Sometimes you have to go out and "find" patients who are too afraid to be treated or whose parents will not bring them out for treatment.

Photo courtesy of Don Shipman

SOF medic (in black jacket) stops to assist stranded motorist in Europe.

Mike Hollingsworth (and Steve Yevich Jr) on a MEDCAP in the Amazon (Jul 98).

Dedication…

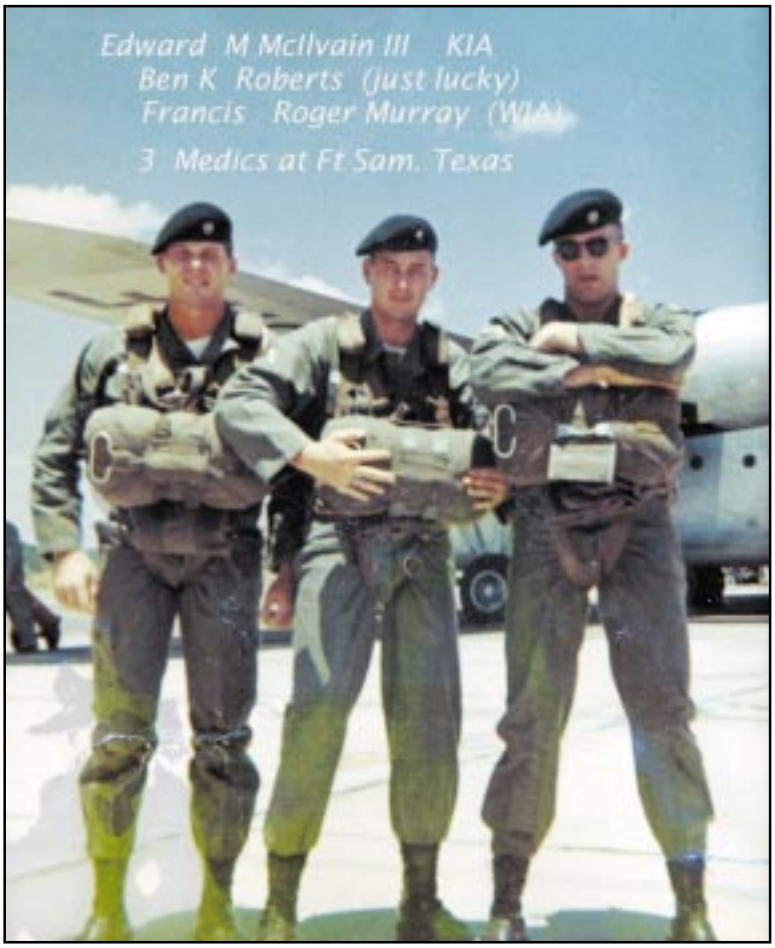


SP4 Edward M. McIlvain III was born in May 9, 1945. He grew up in Wynnewood, PA as a member of the founding family of the Dodge Motor Company. As a young man he was surrounded by five brothers and involved in numerous sports. He was the captain of his high school football team, a talented musician, and a dynamic leader.

Ed joined the Army in 1965 where he trained as a Special Forces medic. He completed initial medical training at Ft. Sam Houston, Texas and advanced medical training at Ft. Gordon, Georgia. Upon graduation as a Special Forces soldier, Ed was placed on orders to South Vietnam.

On arriving at the replacement depot in Vietnam, Ed, like many Special Forces soldiers sent to Vietnam, received a change of orders and was assigned to a non-Special Forces unit. In Ed's case that unit was the 173rd Airborne Brigade. Three months after Ed arrived in country he was killed as a result of multiple fragmentation wounds to the head when the Viet Cong ambushed his platoon with a command-detonated Claymore and small arms fire. There were numerous casualties, but Ed was the only soldier killed. He was 21 years old.

In his will, Ed left $15,000 each to his two best friends and fellow Special Forces Medics, Ben Roberts and Francis Murray…



SCION'S WILL

Green Beret Leaves Pals $30,000

PHILADELPHIA (AP) — An Army Special Forces trooper, killed by shrapnel in Viet Nam, has left $15,000 each to two Green Beret buddies who served with him at Ft. Bragg, N.C.

The soldier, Edward M. McIlvain, 21, of Wynnewood, a fashionable Philadelphia suburb, was killed Oct. 18 in his Jeep. He belonged to a socially prominent family.

The bequests to Francis Roger Murray and Ben K. Roberts were contained in a codicil to McIlvain's will, written April 6.

He specified the two men should get the money if he died "on or before July 6, 1967." A spokesman for Girard Trust, executors of the estate, said the two men had been notified. A spokesman at Ft. Bragg said Murray left for Viet Nam in July and Roberts in September.

McIlvain's will was filed for probate yesterday at Norristown, Pa. He left an estate believed to be greater than $100,000. Included in the bequests were $10,000 to the Darrow School, New Lebanon, N.Y., where McIlvain had been captain of the football team. He said $5,000 of the amount should be used to improve the school's athletic facilities.

The rest of McIlvain's estate was left to relatives.

He was the son of Mrs. Winifred Seyburn Cheston, a daughter of a founder of the Dodge automobile company.

From the staff: This situation, being commonplace for the time, is a stark reality of war while at the same time, a bit unique. In this instance we have a highly trained and fully qualified Special Forces Medic rerouted in assignments once in country. The fact still remains and is still true today... he was a SOF Medic and a brother that gave his all. Even though SP 4 Mcilvain came from a very prominent family in America and could have easily dodged this very unpopular war, he instead, volunteered for the Special Forces. ....and subsequently gave his life

Tribute to a Colonel, a boss, a friend and a brother…

Steven J. Yevich
Colonel, U.S. Army

Some people would find it an easy task to write a token of appreciation such as this, about a man who has accomplished so much in his military career and his life. However, this endeavor turned out to be more difficult than the norm. There is so much to tell, but there just aren't enough pages in this journal to convey all that this man has done for *his* community. One would think, in this small family, many would have heard about someone of COL Yevich's stature but just the opposite is true. Many knew just as little of him as they knew what the purpose of the U.S. Special Operations Command (USSOCOM) Surgeon's Office was. Of the others who knew of him or what he had done either knew him personally, had worked for him in the past or had watched the CNN broadcast of his Vietnam unit, known as MAC-SOG, being awarded the Presidential Unit Citation. While he is well known for his illustrious early years, his career could never be compared to the substantial efforts he contributed during these last three years of his military career as the USSOCOM Command Surgeon.

It was the solid virtues and visionary ideologies that this man held so dear in his heart for SOF medicine, especially for his enlisted medics, that made him so great and truly an unsung hero. His philosophies of "do what is righteously right," "never say no," and "crush tunnel thinking" played significant roles in planning the future path of the enlisted SOF medic. COL Yevich believed that SOF medicine revolved around the abilities and capabilities of each SOF medic no matter what service color they wore and that the only way to find out what the true problems were was to hear it from the bottom up. It was his past as an enlisted SOF medic that taught him that the information buck never necessarily made it through intact from the consumer to the merchant to the bank without it becoming torn, worn or frayed. In the first year as the Command Surgeon, COL Yevich created the concept known as SOF Medtruth. SOF Medtruth is a program based upon anonymous surveys proctored to the frontline operators. These surveys guarantee that real-time, accurate, and non-filtered information is getting to the top level of the command chain so things can be changed to improve SOF medicine.

The SOF Medtruth Program was only the beginning. Another tool that enlisted medical personnel could use to voice their concerns or suggestions was born in 1999 with the Enlisted Advisory Council (EAC). COL Yevich thought that the mainstay of the SOF healthcare provider pool, the medics, should have a say on medical education, training, modernization, research and development, and morale issues that influence their quality of work and life. The EAC is made up of Senior Enlisted Medical Advisors from each SOF component and the Joint Special Operations Medical Training Center. The EAC chairman has a voting privilege on the Board of Regents (BOR) which is the approval and recommendation agency that drives SOF Medicine.

When COL Yevich took over as the Command Surgeon, there was not an official, centralized recertification training course for the medics to maintain their paramedic skills. He came through again by developing and funding the Special Operation Forces Medical Skills Sustainment Program (SOFMSSP). There are currently twenty successful SOFMSSP classes conducted each year, which not only provide paramedical refresher subject matter but also further advance trauma and military medicine classes as well. When COL Yevich passed over the flag to the new Command Surgeon in July of this year over seventy percent of the active duty medics were certified.

If these collaborations weren't enough, COL Yevich was the driving force behind the creation of the professional journal in which this tribute is printed. There isn't a medical journal in the military inventory or in the civilian sector that encompasses medical topics that are specific to our SOF community. This was one of the last notable accomplishments that he'll always be remembered for.

COL Yevich always asked his people, "Are you doing what you do for me because it is out of loyalty to me or just because it is part of your job?" One would think that type of question was pretty ambiguous but it really wasn't at all. He just wanted to make sure that his personnel were as passionate and loyal as he about making sure the frontline medics were their priority and reason for existence. The enlisted brethren will never forget COL Yevich's righteous deeds that he did for them, and they will continue to carry the flame of his passion to improve the community from within. COL Yevich will be missed and all of us wish him the best in his new life and career.

Charlie Mike… Continue the Mission

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